

WESTERN INDUSTRY



• Western power demands have outrun hydro-electric supply in some areas. This Arizona utility now depends chiefly upon steam.



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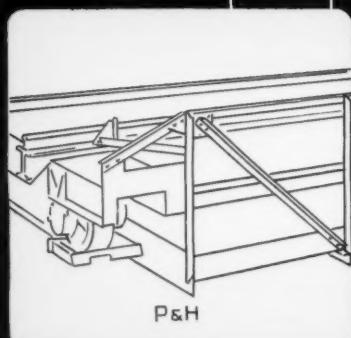
Name _____ Title _____

Company _____

Address _____

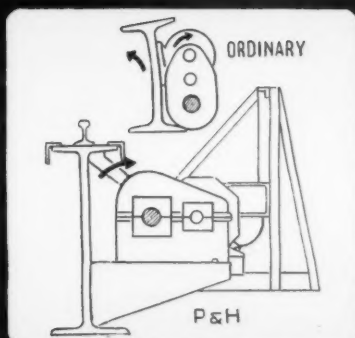


Gives P&H I-Beam Cranes Greater Rigidity and Reduces Maintenance



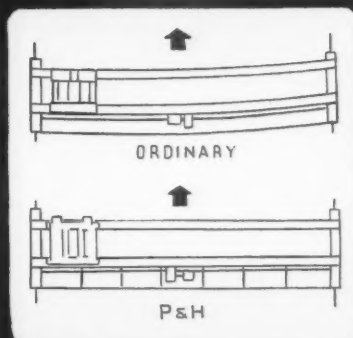
P&H

★ "Third Beam," or handrail, connected to trucks, is actually a husky latticed bridge member supporting bridge drive, cab and footwalk.



P&H

★ "Third Beam," through its rigid horizontal bracing to trucks and I-beam, reinforces I-beam and prevents twisting due to torque of bridge drive.



P&H

★ "Third Beam" prevents end-to-end weaving of bridge when moved. This is particularly important on sudden starts and stops or short bridge travel.

P&H

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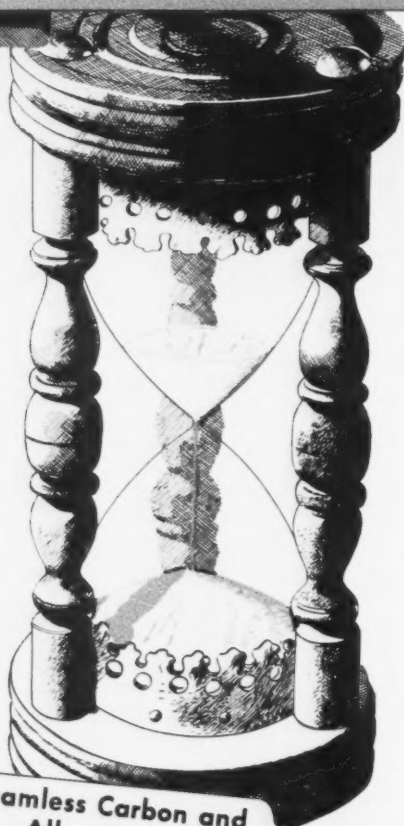
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P&H I-BEAM CRANE design gives you the same rigidity and strength as box girder construction. As a result, the maintenance of bridges, bridge drives, trucks and supporting structures is minimized. Operation is smooth; safety is maximum. Thus P&H makes the advantages of I-beam cranes practical for spans up to 55 feet, with capacities of 15 tons, and spans of 50 feet for 30-ton capacities. For added values like this, look to P&H, America's leading crane builders.

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RESULT in our now offering in addition to carbon and alloy cold drawn seamless and welded tubing . . .

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These new products will be produced by the West's ONLY Tube Mill to the same production and quality standards which have made our other products outstanding. Contact our sales and customer service departments for details . . . Pacific Tube Company, 5704 Smithway, Los Angeles 22, California.

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Specifications: Many

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PACIFIC!**

C. F. Bar Stock

Size: $\frac{1}{2}$ " to $1\frac{3}{4}$ " Diameters
Specifications: Many

PACIFIC TUBE COMPANY

EDITORIAL COMMENT

Bread Across the Sea

COMPASSION for a world in want grows slowly, but nonetheless surely.

Here and there households begin to use less bread, or none at all; in some homes old lists of relatives or friends across the water are brought to light for new mailings of food packages; one former GI and then another ransacks his belongings for the address of that European family who were so hospitable to him a couple of years ago; Red Cross and other organizations receive increasing calls for information as to how help can be given; gradually the stream of distribution through which grain passes, from farm to mill to distributor to family table, is pinched into narrower limits in order to meet export quotas; at Washington discussion and planning for increasing the flow of food to hungry humans elsewhere goes on ceaselessly.

For lack of compassion for others this situation and the war and dictatorships and distrust that preceded it have come to pass, just as the same lack has caused industrial disputes at home to become formidable. Not that there is less compassion in the world than in earlier days, but that the crumbling of time and space will compel the world to realize that its only safeguard is constant compassion, rather than merely intermittent use of it.

Some Light Needed

NOBODY knows for sure why labor shortages and unemployment exist simultaneously. Some experts may say that the available jobs aren't worth taking, and that an unemployed person is justified in drawing compensation while looking for a better job. Others believe that the unemployed are just resting up from the heavy strain of war production. Many more explanations are offered, but none based on definite knowledge of the facts.

Western Industry believes that the unemployment compensation machinery could rightfully be used for some sort of "Gallup poll," since the facts are of great importance to the entire community. Unquestionably it is to the interest of every person in the labor market to have employers in a position to make intelligent decisions, and the questions asked of those drawing unemployment compensation could be so phrased as to inspire confidence and encourage an honest reply. Obviously anything that savored of putting people "on the spot" would defeat its own ends, so this search for information would have to be planned with great care.

A Reply Builds Good Will

MANY manufacturers today seem to be unable to realize that the sea of perplexity regarding deliveries in which they are being tossed also surrounds the distributors and users of their materials, parts or finished products. Consequently they consign to the pigeonhole or wastebasket the telegrams and letters of inquiry from customers whose business existence is also at stake, instead of making an effort to reply.

No doubt the inquiries, protests and demands are far too often unnecessary, but they can be converted into good will by a prompt and courteous reply. When ignored, they tend to breed a sense of indifference that is reflected all down through the manufacturer's organization and inevitably becomes manifest to the customer in due course of time.

It is too bad that such opportunities to build up good will are being overlooked. There is no ceiling on courtesy and no shortage in the available supply of it, nor are there any demands on courtesy that it is unprofitable to fill.

WESTERN INDUSTRY

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OUR COVER PICTURE

Western postwar electric power demands are on the increase. Central Arizona Light & Power Co. steam electric generating plant at Phoenix.

A. C. PRENDERGAST, Editor
S. S. MORRILL, Assistant Editor

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Washington, D. C.: ARNOLD KRUCKMAN, Associate Editor, 1120 Vermont Ave., N.W., Washington 5, Telephone District 8822.
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Portland: LAMAR NEWKIRK, c/o Oregon Journal.
Seattle: R. H. SOGARD, 10504 Valmay St.
Denver: HENRY W. HOUGH, 1151 Humboldt St.
Salt Lake City: O. N. MALMQUIST, c/o Salt Lake Tribune

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Chicago Office: A. C. PETERSEN, District Manager, 5833 S. Spaulding Avenue, Chicago 29, Telephone: PRespect 1685.

New York Office: RALPH E. DORLAND, District Manager, 2225 Coles Ave., Scotch Plains, N. J.

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Spotlight

on the NEWS

WESTERN INDUSTRY
FOR JUNE, 1946

VOLUME XI

NUMBER 6

NCESSITY is the mother of invention. Consequently the general predictions that it will be ten years at the earliest before atomic power comes into any sort of industrial use seem like looking through the wrong end of the telescope. Here is one phase of the necessity, briefly stated:

A remarkable industrial development in southern California, with Los Angeles already one of the most important cities in the country, an area with many great natural advantages, but limited in water supply, no matter how much the flow of the Colorado River may be impounded. Already the water level in Boulder Dam has been dropping every year, because of the heavy hydro-electric power demand, and the headwaters of the Colorado are being tapped to siphon water under the Continental Divide to serve the eastern slope . . . and industrial and agricultural possibilities in Nevada and Arizona still in their infancy! No wonder Southern California Edison is building a \$15,000,000 steam plant at Redondo Beach to generate electricity.

Necessity pushed aside the fences of "impossibility" in war time. That it can do the same in peace is indicated by Wendell M. Latimer, dean of the college of chemistry, University of California, who writes us as follows:

"Until the secrecy of breeder-power piles is eased, it is difficult for me to discuss in any detail the production of power from atomic energy. Most of the statements I see in the papers are obviously written by men who have not studied the engineering aspects of the problem and I think it is unfortunate that the public is frequently given the impression that cheap power cannot be obtained.

"I agree that the time has not come for the release of all secrecy restrictions, but I hope that an official statement will be forthcoming from a competent engineering group with regard to the possibilities.

"The problem is one of the greatest importance to the Western states. With the exhaustion of our gas and oil in California, some form of cheap power will be required if we are to maintain extensive industrial developments. There are many other aspects, such as cheap power for the distillation of sea water to irrigate the arid coastal regions and even to supply water to the Los Angeles area.

"These are my general views on this subject, but at present I am not in a position to discuss the technical side without revealing at least by implication facts which are still highly classified."

Hindsight Department

Postwar planning certainly overlooked one highly important thing. It failed to study what would happen in the labor market. When CED and Federal Reserve Bank made their joint census of postwar intentions of Pacific Coast manufacturers, they should have polled the unions also on their wage demand intentions. Then we might have anticipated the strikes by machinists, lumbermen, longshoremen and cannery workers. Might have been a good thing also to questionnaire NLRB as to its policies . . . no kidding, NLRB may be dumb, but it is very important, as the canneries will tell you. On a national scale, asking John L. Lewis what he intended . . . tsk! tsk! what a way to run a country!

Foresight Department

How anyone hates to be reminded of what he said or predicted a year or two back. But we don't believe CED and Federal Reserve Bank should feel a bit disturbed over their census, because they, or the people who supplied them with postwar employment information back in late 1944 and early 1945 merely played safe.

Comparison of this survey with the BLS manufacturing employment statistics for January, 1946, on page 35 of this issue are

both interesting and significant. Assuming good business conditions, the survey indicated a postwar employment total of 781,600 in the three Pacific Coast states. The BLS figures, when war work was all over except for a little shipbuilding, when new enterprises and developments had hardly started, when local and national strikes, material shortages and, yes, labor shortages, seemed to dominate the situation, showed 779,000.

These BLS figures reflect nothing of the startling change in the Pacific Northwest light metals picture, the ramifications bound to result from a settlement of Geneva's future, nor the manifold developments in the automotive, chemical and many other industries. It may take a year to smooth out the troubled surface of the labor situation, but unquestionably the West is bound to move forward in a big way.

NAM and Public Relations

NAM's annual barnstorming tour of top officials furnished good evidence this year of getting down to business on one of the most important tasks facing industrialists, either on a national or local basis. The task is public relations, which may mean anything from self-defense to merchandising promotion.

It is a matter for argument whether any good will is built by the customary pontifical blasts against government and labor by whoever happens to be NAM president for the year, but the presently-developing NAM plan to follow up its anti-OPA and pro-free-market campaign with a pledge of its members to hold profits within reasonable limits gives evidence of careful thinking.

NAM's best public relations job of all, however, seems to be that of teaching its own members how to deal individually with the press. The publicly-staged press conferences at the NAM meetings in Western cities proved to be highly educational, and the regional tours of newsmen have given many industrialists some glimmer of the kind of news in the industrial sphere that is usable by newspapers.

Western Industry In Pictures Postwar Inventory



In Our Mail Box

RFC Makes Reply

Editor, *Western Industry*:

Concerning Mr. Kruckman's article in your May issue, entitled "Is There Scandal in the Surplus?", I sincerely believe, in the case of this article, very few, if any, of the allegations can be supported. As a public service, may I suggest and invite the editors of *Western Industry* to conduct an investigation, through impartial and responsible sources, and report back in a subsequent issue of the magazine the result of such findings.

When the surplus assignment was first given to RFC, I invited Mr. Serge F. Ballif, Jr., to join the staff and organize the disposal activities. He did not seek the job. He came only after he was convinced he could perform a useful public service.

In him, I felt, were represented the qualifications so highly essential in such a responsibility: character, integrity, merchandising experience, a successful background in varied enterprises, and a desire to discharge responsibilities in a courteous manner, without fear or favor. Mr. Ballif

assumed this responsibility and acquitted himself in a highly creditable manner, in my opinion. Since the separation, as an independent agency, on March 25, 1946, he was appointed Regional Director of the War Assets Administration.

Naturally, in handling surplus disposal, there have been, and will be, many disappointments and complaints. The United States Senate Small Business Committee conducted hearings in southern California the latter part of February, two days of which were in San Diego and three days in Los Angeles. On the final day, the Chairman of the Committee made a statement in the hearings to the effect that Mr. Ballif had done an excellent job of surplus disposal.

HECTOR C. HAIGHT
Manager, Loan Agency of the
Reconstruction Finance Corporation
Los Angeles.

Hope For Tacoma

Editor, *Western Industry*:

I hope we can get someone to ride your "Tacoma" horse in the aluminum derby, which despite some people is about to be a really competitive race.

HUGH B. MITCHELL
United States Senate.

Allergic to Alcoa

Editor, *Western Industry*:

Your aluminum cartoon in the April issue of *Western Industry* is a very clever job. As Mr. Wilson pointed out, the artist was a little confused in having us riding the Shipshaw horse. I am sure we have mailed you our various documents in connection with the disposal of government-owned plants, but in case we have not done so I am attaching several of these for your files.

One of these is our answer to Mr. Symington, another is our reply to Attorney General Clark and the third is a document covering the granting by us of the free use of our patents in connection with the Hurricane Creek alumina plant. The fourth document is our recently issued annual report in which we make the statement that up to the present time Alcoa has not been permitted to purchase or lease any of the government-owned facilities on which it has made offers, despite the fact that Alcoa built and operated these facilities during the war.

C. C. CARR
Director of Public Relations
Aluminum Company of America
Pittsburgh, Pa.

If you make it of

Wire



**make it of
the best!**



THAT means U·S·S American Manufacturers Wire. For over 100 years, this superior quality wire has been produced for more than 160,000 different manufacturing uses.

American Manufacturers Wire is made in more than 400 different types. Among them, you'll find the right shapes and sizes, in the right steel analysis for your needs, regardless of how complicated they may be. You can choose from all the old familiar forms — and some forms entirely new. Wire that is hard or soft, stiff or ductile . . . of carbon, alloy or stainless steel. Wire for peach tree hooks, gravel screens, tire beading, piano strings, bobby pins, bicycle wheel spokes, bolts, nails. These and innumerable other products are being made better with American Wire.

Our wire specialists will be glad to consult with you on the uses of American Wire. An inquiry will receive their prompt attention. And, despite the current production and delivery situation, we shall do our best to take care of your needs. Contact the office nearest you.



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San Francisco · Los Angeles · Portland · Seattle · Salt Lake City
American Steel & Wire Company

Cleveland · Chicago · New York
Tennessee Coal, Iron & Railroad Company, Birmingham, Southern Distributors
United States Steel Export Company, New York

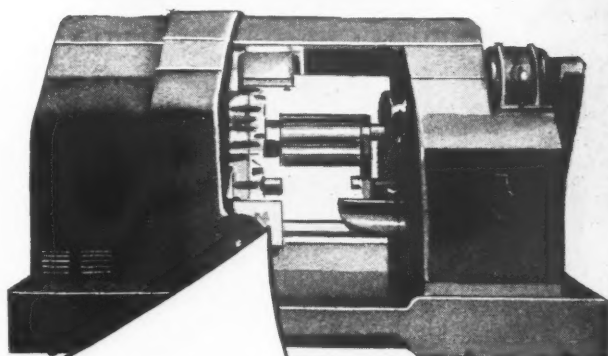
UNITED STATES STEEL

SPECIAL LATHE BUYS!

TYPE	SIZE OR CAPACITY	QUANTITY AVAILABLE NOW
A Heavy Duty Mfg. and Prod. Multi-tool, not automatic	Up to 20" swing	788
B Single Spindle, Horizontal, Platen type		63
C Single Spindle, Horizontal, Turret type		280
D Multi Spindle, Horizontal	4 to 8 Spindles	1,318
E Multi Spindle, Vertical	6 to 8 Spindles	202
F Auto. between centers chucking, horiz. single spindle	All sizes	2,036
G Speed Lathes	1/6 to 5 HP	2,070
H Turret Lathes	All sizes	144

D Multiple Spindle Horizontal Lathes

These 4, 5, 6 and 8 spindle machines or equivalent (see table) are located in Chicago, Cleveland, Detroit, Nashville and St. Louis offices of War Assets Administration. Ask any W. A. A. office.



GOVERNMENT-OWNED SURPLUS PRODUCTION EQUIPMENT

LATHES



An immediate source of additional or more modern production equipment is the large inventories held by the War Assets Administration. Built for war, basic machine tools such as these lathes are ready to serve in peace. Hundreds of items are available now, priced for quick sale. You can do yourself and America an important service by putting this idle production capacity to work as quickly as possible. Check this and the following three pages carefully and act at once to secure equipment you can use profitably.

A Heavy Duty Mfg. and Prod. Multi-tool Lathe (not automatic). These heavy duty production tools are available in quantity in Detroit, Chicago, Houston, and New Orleans offices of War Assets Administration. For details contact any W. A. A. office.

MAIL TODAY*

To War Assets Administration:

Please send me information on the types of lathes checked at the right. I am also interested in the availability of the following types of lathes not listed in this advertisement:

.....

Name.....Telephone No.....

Firm.....

Address.....

City.....State.....

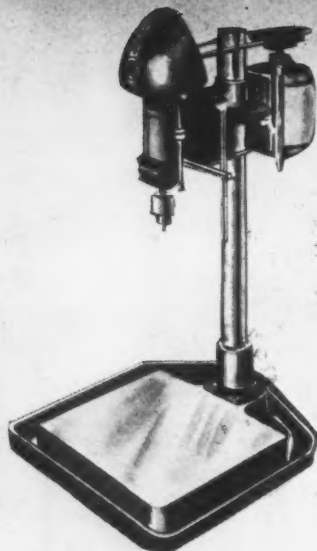
*For War Assets Administration address, see 4th page of this advertisement.

LATHE CHECK LIST

(These key letters correspond to the machines listed in the table above. Simply check those in which you are interested.)

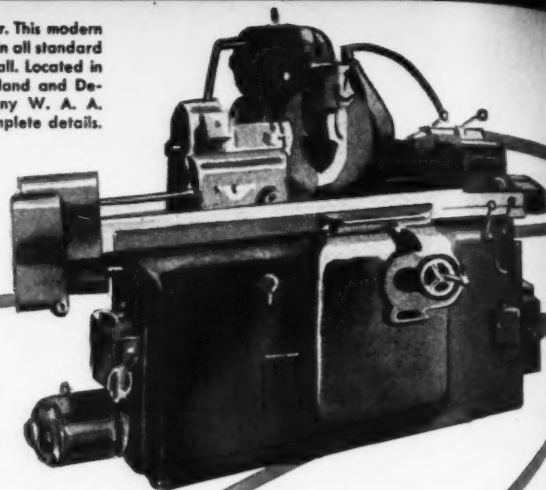
A ____ **B** ____
C ____ **D** ____
E ____ **F** ____
G ____ **H** ____

Veterans of World War II—To help you in purchasing surplus property, veterans' units have been established in each War Assets Administration Regional Office.



Bench Drill. Sensitive, single spindle, round column type; available up to 22" swing in capacity under $\frac{1}{2}$ "; from 16" to 24" swing in capacity from $\frac{1}{2}$ " to 1". Located in Boston, Birmingham, Cleveland, Charlotte, Detroit, Minneapolis, New York, Oklahoma City, Philadelphia, San Antonio and St. Louis Regional Offices.

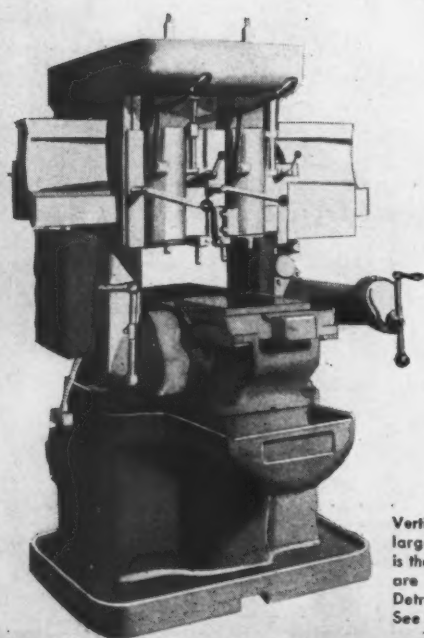
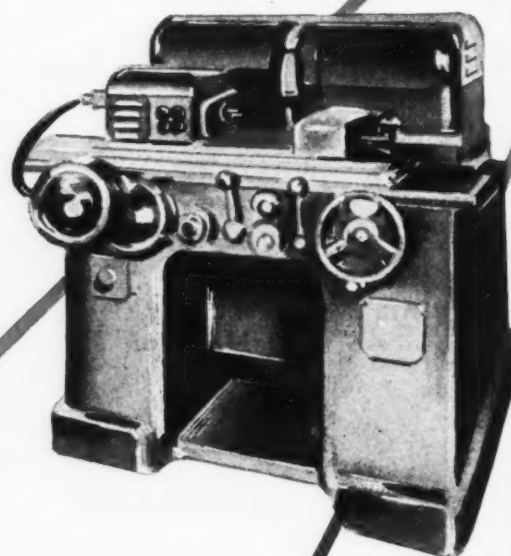
External Thread Grinder. This modern equipment is available in all standard sizes, 635 machines in all. Located in Boston, Chicago, Cleveland and Detroit. Simply contact any W. A. A. Regional Office for complete details.



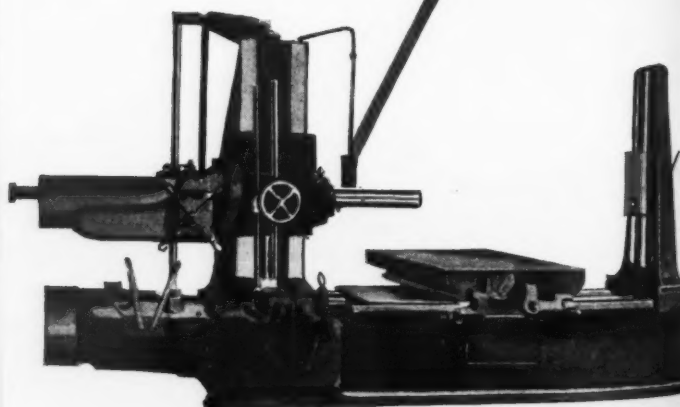
External Cylinder Grinder—Plain. This is a Norton model but other makes are also available. Total inventories in Boston, Chicago, Cleveland, Detroit, Philadelphia and St. Louis amount to 1730 machines.



Automatic Screw Machine-Bar. The machine shown is a model "B" Davenport tool with 5 spindles. It is available in sizes able to handle stock from 1" on up. Machines are warehoused in Boston, Chicago, Cleveland, Detroit, New York, Philadelphia and St. Louis.



Vertical Profiler—2 spindle type. Typical of a large number of 1, 2, 3, and 4 spindle machines is the milling machine shown here. These machines are available in Boston, Chicago, Cleveland, Detroit, New York and other Regional Offices. See list (next page) for other types also in stock.



Horizontal Boring, Drilling and Milling Machines. Here is another illustration of a machine typical of an entire class of machine tools available in large quantity at many W. A. A. Regional Offices, in standard makes and sizes.

BASIC TOOLS

GOVERNMENT-OWNED SURPLUS PRODUCTION EQUIPMENT

(second in a series of 4-page advertisements designed to inform industry of available machine tool surpluses)

Here, by the hundreds, are the tools you need to modernize your production and establish new enterprises—available now at low cost—at a time when a war-devastated world is exerting the biggest demand for goods and services ever known. You owe it to yourself, your organization, and your fellow men to put this productive capacity to immediate use. So check this list carefully. Find out which of these basic tools will help you solve immediate production problems. Then clip and mail the expediting coupon to the nearest War Assets Administration office listed on the next page. War Assets Administration is a government agency specially created to help you apply War Surpluses to post war needs.

CHECK LIST OF SPECIAL MACHINE TOOL BUYS!

Here are a few of the many thousands of machine tools now available through War Assets Administration.

KEY*	MACHINE (function)	TYPE	SIZE OR CAPACITY	Quantity Available Now
A—	Grinders	Race Radius—External		118
B—		Race Radius—Internal		72
C—		Contour Profile		73
D—	Screw Machine	Auto—Bar—Single Spindle	Up to 1½" cap.	1973
E—	Screw Machine	Auto—Bar—Five Spindles	All sizes	1515
F—	Screw Machine	Auto—Bar—Eight Spindles	1½" and Over cap.	380
G—	Engravers	Pentagraph—2 Dimensions		70
H—	Honers	Internal—Horizontal	Under 6" Bore	173
I—		Internal—Vertical		129
J—	Lapping	Flat Surface Only	24" Diam. lap plate	107
K—	Polishers & Buffers	Floor Type	½ to 10 H.P.	1479
L—	Lathes	Speed Type	Up to 3 H.P.	1490
M—	Saws	Circular Cut-off		250
N—	Abrasive Machine	Belt Drum & Disc		580
O—	Abrasive Cut-off			112
P—	Tapping	Vertical—1 & 2 Spindle		457
Q—	Tapping	Horizontal—1 Spindle		259
R—	Die Threading	Belt Rotary—1 Spindle		390
S—	Centering	Double End—Horizontal		112
T—	Pointing, Chamfering & Burring			141
ZZ—	Gear Shapers	External & Internal Spur—External only	Up to 40" Diam.	
PP—		Spur & Helical—External & Internal		
QQ—		Spur & Helical—External only		
RR—		Bevel Type not inc. Planer Type Str. B		
SS—	Gear Cutters	Generating Type Grinding		
TT—	Gear Tooth Finisher	Formed Wheel Type External only		
UU—	Gear Tooth Lapper	Comb. External & Internal Rotary Type External Cylinder—Plain		
WW—	Gear Tooth Shaver			
XX—	Grinder			

KEY*	MACHINE (Function)	TYPE	SIZE OR CAPACITY	Quantity Available Now
U—	Shaver	(Not Gear)		104
V—	Reamer	(Not Rifle)		516
W—	Drawing Machine		100,000# and over	21
X—	Machinery & Equipment Allied to Primary Metal Forming Machine and Equipment	Pickling Vertical—Single Action Vertical—Double Action	All sizes 5 to 100 Tons 5 to 100 Tons	149 165 111 1631
Y—	Straight Side Presses			
Z—	Flame Cutting Machine			
AA—	Hardness Tester	Brinell—Portable & Power Rockwell—Manual & Power		200
CC—		Magnetic (Magnaflux) Static Dynamic		425 601 93 67
DD—	Inspection Machine			
EE—	Balancing Machine			
FF—				
GG—	Boring, Drilling & Milling	Horizontal Vertical	Under 3" to 6" Under 36" to 120" Swing	209 683
HH—	Boring & Turning Drills			
II—	Boring Fixed Rail Tank Mill	Vertical Horizontal bridge—single end Horizontal bridge—double end Box column—single spindle	Under 8" to 14" Under 8" to 14" Under ½" Cap. Up to 22" Swing ½" to 1" Cap. 16" to 24" Swing	87 486 226 287
JJ—	Precision Boring Machines			
KK—				
LL—	Drills			
MM—				
NN—				
OO—				

EXPEDITING COUPON

Use this coupon to conserve your time. Circle by key letters the machines in the above group in which you are interested and mail to your nearest W. A. A. Regional Office.* We will determine in advance our stock situation on the machines and inform you quickly, without obligation.

To War Assets Administration:
Do you have in surplus stocks the following circled machine tools? Where are they located? What is their condition?

A, B, C, D, E, F, G, H, I, J, K, L, M, N,
O, P, Q, R, S, T, U, V, W, X, Y, Z,
AA, BB, CC, DD, EE, FF, GG,
HH, II, JJ, KK, LL, MM, NN,
OO, PP, QQ, RR, SS, TT,
UU, VV, WW, XX, ZZ.

I am also interested in the following machine tools not included in your list:

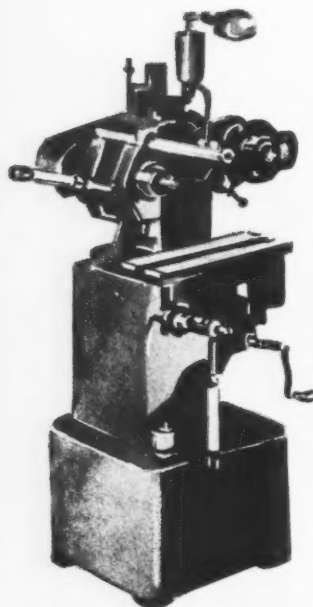
.....Tel. No.
Name
Firm
Address State
City
*For War Assets Administration address, see 4th page of this advertisement.

*KEY letters are provided for your convenience in filling out the coupon to the right. They do not refer to any other listing of surplus property. If used in contacting War Assets Administration Regional Offices by letter, wire or phone, please refer to this advertisement.

Spec. Kingsbury Way	Up to 32" Swing	161
		296

All items shown on this and preceding three pages are offered subject to prior sale. This surplus property has previously been advertised and offered to prior claimants including Veterans of World War II.

MILLERS

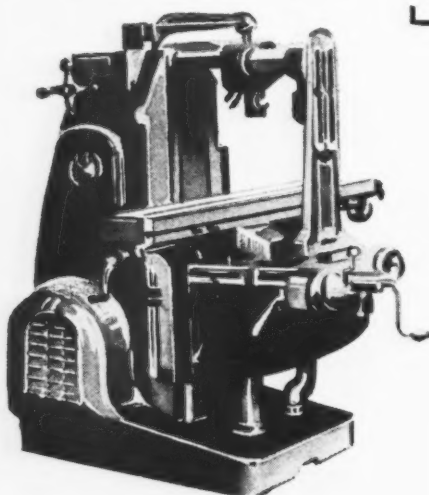


A Horizontal Hand-Feed Millers

For this and all the machine tools shown in this advertisement, simply contact your nearest War Assets Administration Office listed below, using the coupon provided. That office will know that large inventories of this miller, for example, are available in Boston, Detroit, Kansas City, and New York and how to get one or more for you.

B Horizontal Miller (knee type) These machines are located in quantity as follows.

#1; under 28" Table Travel; New York, Boston, Detroit. #2; 28" to 34" Table Travel; Detroit, Cleveland, Boston. #3; 34" to 42" Table Travel; Detroit, Cleveland, Chicago and Philadelphia. #4; 42" to 50" Table Travel; Detroit, Cleveland. #5; over 50" Table Travel; Detroit, Cleveland, Chicago.



GOVERNMENT-OWNED SURPLUS PRODUCTION EQUIPMENT

These milling machines, and the other surplus machine tools shown on the preceding 3 pages, were productive enough and modern enough to win history's biggest war. They were versatile enough to turn out some of the most intricate weapons of all times. As they stand—some used and some unused—they are the largest untapped source of peacetime productivity and profits in the U. S. today. With them you can modernize and speed up your production or establish new enterprises at lowest cost. And it's easy to do. As a first step in acquiring these machines, simply fill in and mail the coupons on this or the preceding 3 pages.

FREE INFORMATION

To War Assets Administration:

Without obligation, please send me detailed information on the milling machines checked at the right and on the following types not included in your list:

.....
.....
.....

277-1

MILLER CHECK LIST

(These key letters correspond to the machines listed in the table above. Simply check those in which you are interested.)

A	E	I
B	F	J
C	G	K
D	H	L

Name

Tel. No.

Firm

Address

City

State

SPECIAL MILLING MACHINE BUYS!

KEY	TYPE	SIZE OR CAPACITY	QUANTITY AVAILABLE NOW
A	Horizontal, Plain, Hand Feed	All sizes	564
B	Horizontal, Plain, Knee Type	#1 to #5	2,125
C	Vertical, Universal	#1 to #5	847
D	Auto Millers	All sizes	455
E	Bed Type, Plain, Horiz. Spindle	All sizes	2,703
F	Vertical Spindle, standard	All sizes	428
G	Vertical Fixed Bed Profiler	1 and 2 Spindles	847
H	Thread Millers—Universal (non-auto)	12" Work Dia. and up.	76
I	Thread Millers—Universal (auto)	Up to 20"	238
J	Thread Millers—Chucking (auto)		207
K	Planetary Milling Machines	6" Work Dia. and up	206
L	Spline Millers		248

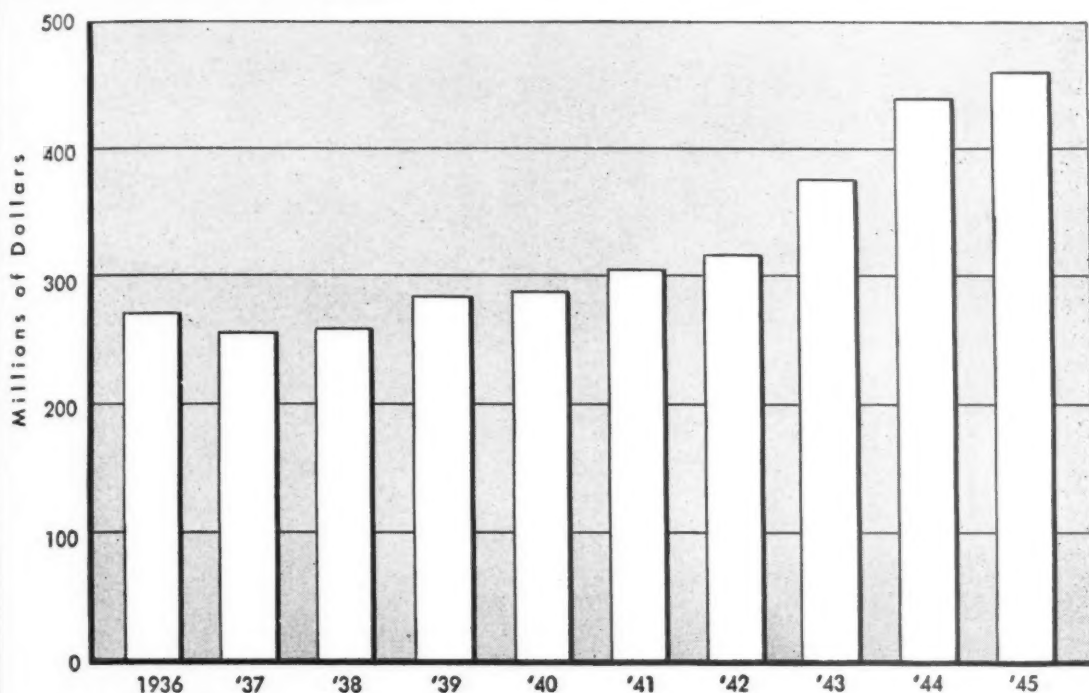
WAR ASSETS ADMINISTRATION

OFFICES LISTED BELOW ARE TEMPORARILY IN
RECONSTRUCTION FINANCE CORPORATION AGENCIES

Offices located at: Atlanta • Birmingham • Boston • Charlotte • Chicago • Cleveland • Dallas • Denver • Detroit
Helena • Houston • Jacksonville • Kansas City, Mo. • Little Rock • Los Angeles • Louisville • Minneapolis
Nashville • New Orleans • New York • Oklahoma City • Omaha • Philadelphia • Portland, Ore. • Richmond
St. Louis • Salt Lake City • San Antonio • San Francisco • Seattle • Spokane • Cincinnati • Fort Worth (Tel. 3-5381)

YOU'RE PAYING FOR FIRE PROTECTION—WHY NOT HAVE IT?

FIRE LOSSES CONTINUE UPWARD



Data: National Board of Fire Underwriters.

© Business Week

DESTRUCTION APPROACHES ½ BILLION ANNUALLY.

This simple chart pictures in an all-too-undramatic fashion the mounting disaster due to fire. Its upward trend signifies increased hazards to human life, increased business mortality (2 out of every 5 burned-out businesses never resume), and disruption of vital health and educational facilities. In the year 1946 the usual aftermaths of fire are magnified by the shortages which make replacements uncertain, if not actually impossible.

CAUSES OF MOUNTING FIRE LOSSES. The causes of this mounting loss are many—hurried construction, new hazardous materials, shortage of trained firemen, carelessness.

95.9% EFFECTIVE CONTROL WITH AUTOMATIC SPRINKLERS. Based on the records of 68,611 fires, there is one means of effectively stopping fire in 95.9% of the cases. It is Automatic Sprinkler Fire Protection. The chances of major loss, either of life or valuable property, in a sprinkler-equipped building have proved to be extremely slight.

YOU'RE PAYING FOR GRINNELL PROTECTION—WHY NOT HAVE IT? Reduction of insurance premiums upon installation of a Grinnell Automatic Sprinkler System varies with the type of structure and its use. A typical

example is a non-sprinkler-protected property where insurance premiums were \$5,000 a year. Installing a Grinnell System reduced insurance premiums to \$2,000. The sprinkler installation soon paid for itself then continued to pay a handsome return on the investment—*plus safeguarding the entire property against fire.*



ACT NOW!—A nearby Grinnell engineer will be glad to discuss Automatic Sprinkler Fire Protection for your property. Grinnell Company, Inc., Executive Offices: Providence 1, R. I. Branch warehouses at Los Angeles, San Francisco, Oakland, Seattle.



DEVOTED TO THE DEVELOPMENT OF AUTOMATIC FIRE PROTECTION SINCE 1873 . . . PROTECTING OVER SEVENTY BILLION DOLLARS WORTH OF THE WORLD'S PROPERTY

CONCENTRATION



Concentration kindles the
flame of success.
By bringing all light to bear
on the client's sales
problems,
By setting forth his message
in clear focus,
The McCarty Company con-
centrates the team work of
its entire staff to the de-
velopment of an energetic
advertising impact.
Thus, The McCarty Company
has shared in the success
of its clients for over
a quarter of a century.

The McCarty Company
Advertising Counsellors

ESTABLISHED 1919

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Insurance Policy - Valuable!



Attached to this card is another—your
READER'S INSURANCE. Take advantage
of the offer and insure yourself
against missing a single issue of

WESTERN INDUSTRY

SUBSCRIPTION
ORDER FORM

For Your Convenience - Use it Today!



THE BIG SIZES up to 1½" diameters . . .
in any length . . . any metal . . . bright
or high carbon heat-treated, are mass pro-
duced at Cooper's — the largest cap screw
plant west of Chicago. For quick delivery
contact your Cooper jobber.

CAP SCREWS

COOPER

*Screw
Manufacturing
Company*

Representatives:

California Sales Agcy.
666 State Street
San Diego, Calif.

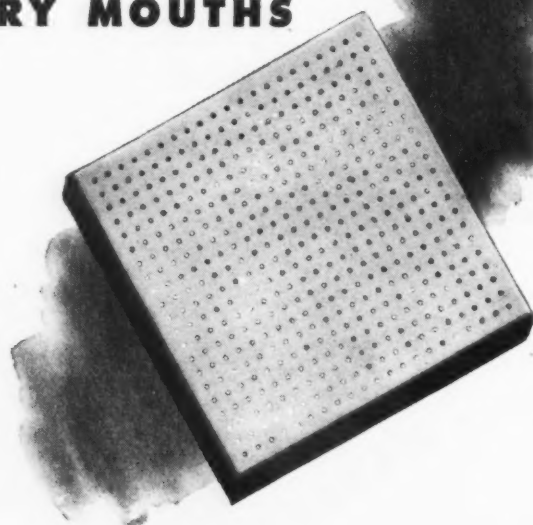
Robert L. Knowles Co.
613 2nd Nat'l Bk. Bldg.
Houston, Texas

L. M. Baxter Co.
1006 Lowman Bldg.
Seattle, Wash.

L. M. Baxter Co.
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441 HUNGRY MOUTHS



**THAT EAT UP
NOISE**

You're looking at a single Acousti-Celotex* 12" x 12" tile . . . *the* famous perforated fibre tile and most widely used of all sound conditioning materials.

Each of those 441 holes swallows noise . . . digesting it in a labyrinth of cane fibre. Thus sound has no chance to echo. Words remain clear and audible. Listening quality is vastly improved.

Offices, factories—everywhere have remedied their noise problems by Sound Conditioning with Acousti-Celotex fibre tile. Applied directly to ceilings it soaks up noise, and prevents echoes. Its soothing quiet relieves irritating sounds that cause emotional strain. It increases the efficiency and calm of everyone in the room.

Acousti-Celotex can be quickly applied to ceilings and other surfaces without disturbing routine. It can be repeatedly painted without loss of efficiency.

Why not talk over your acoustics problem with your nearest Acousti-Celotex distributor? He is a member of the world's most experienced acoustical organization . . . and he *guarantees results!* No obligation, of course! A phone call or note will bring him to your desk.

Distributors of Acousti-Celotex in the West

ASBESTOS SUPPLY COMPANIES
SEATTLE • TACOMA • PORTLAND • SPOKANE • MISSOULA

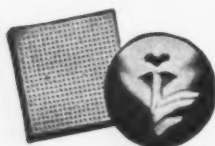
JAY GREAR CORPORATION
ALBUQUERQUE • EL PASO

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Sound Conditioning with
ACOUSTI-CELOTEX

* *Perforated Fibre Tile* REG. U.S. PAT. OFF. SINCE 1925

Wire ahead **FOR FULL PRODUCTION**

WHEN ELECTRIC POWER costs so little... and other costs are rising, no management can afford to overlook adequate wiring.

Obsolete wiring, overtaxed wiring can reduce machine efficiency, and hence worker efficiency, from 25 to 50 per cent.

For, when power fails, the productivity of the most ambitious, the most conscientious,

the most skilled workmen you have must drop accordingly.

Talk over your wiring problem *now* with your plant power engineer, your consulting engineer, electrical contractor or power salesman. It may save expensive alterations later.

These men *know*, as you suspect, that postwar production depends on postwar wiring.

461110



ANACONDA WIRE & CABLE COMPANY



about **TENOL 800**, Richfield's **NEW**, HEAVY DUTY, ALL PURPOSE MOTOR OIL

- | | |
|---|---|
| 1 Strong protective film prevents seizure at high temperatures and speeds. | 5 Resists foaming in crankcase and air cleaner insuring constant oil supply. |
| 2 Perfect piston "seal" provides greater engine load-carrying capacity. | 6 Non-corrosive to bearings, resists acid formation caused by blow-by. |
| 3 Stands up under high temperatures, flows easily in cold weather. | 7 Prevents ring sticking, no scoring of cylinder walls and pistons. |
| 4 Resists formation of gums, sludge, and carbon on vital engine parts. | 8 Provides cleaner engines, insuring maximum motor performance. |

For gasoline—diesel—propane—butane—and natural gas engines.

**THERE IS A SCIENTIFIC RICHFIELD LUBRICANT
FOR EVERY MACHINE IN EVERY TYPE OF SERVICE**

RICHFIELD

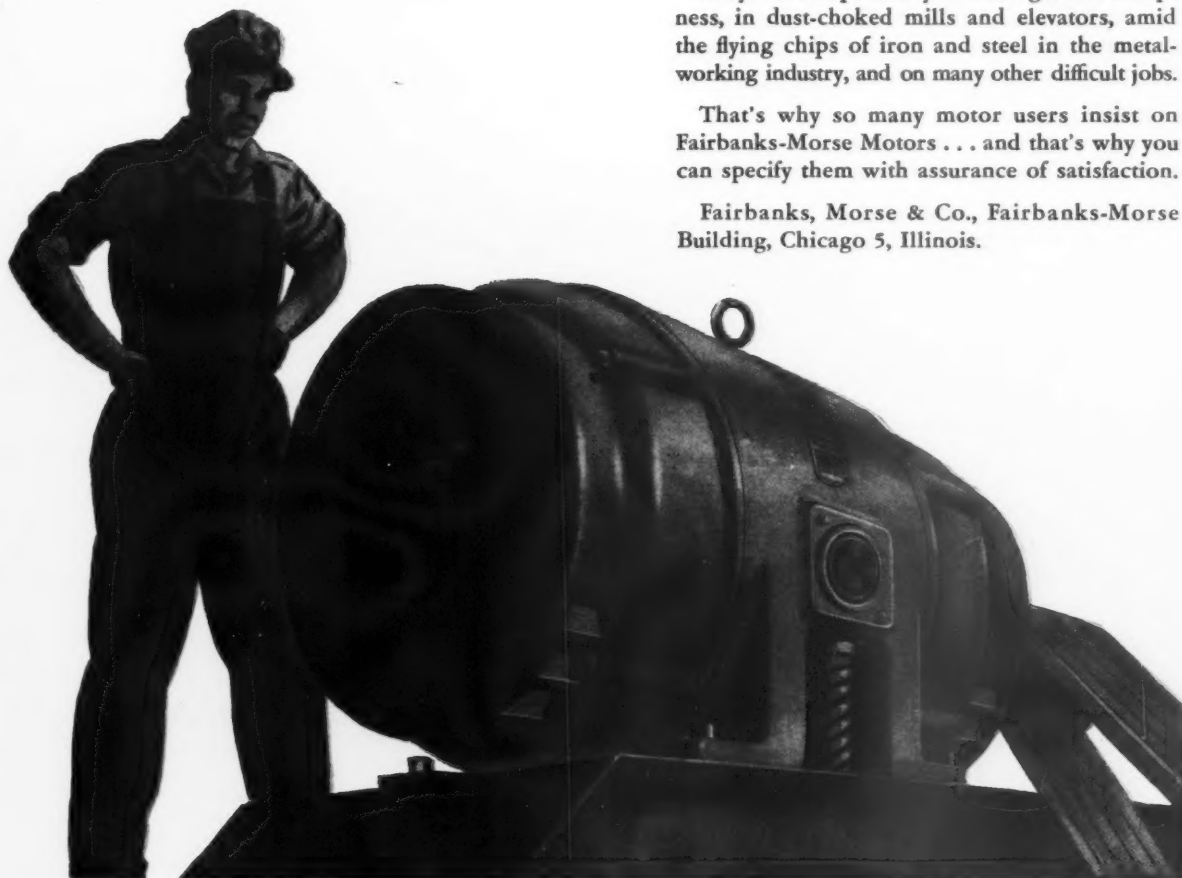
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SEE FAIRBANKS-MORSE
FIRST FOR MOTORS

CONSTANT research and development have contributed many features which make Fairbanks-Morse Motors outstanding. Today, they are an accepted standard in industry.

They serve dependably in underground dampness, in dust-choked mills and elevators, amid the flying chips of iron and steel in the metal-working industry, and on many other difficult jobs.

That's why so many motor users insist on Fairbanks-Morse Motors . . . and that's why you can specify them with assurance of satisfaction.

Fairbanks, Morse & Co., Fairbanks-Morse Building, Chicago 5, Illinois.



Fairbanks-Morse

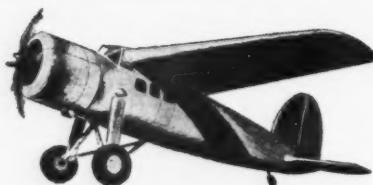
A name worth remembering



Diesel Locomotives • Diesel Engines
 Scales • Motors • Pumps • Generators
 Magnetos • Stokers • Railroad Motor
 Cars and Standpipes • Farm Equipment



**We made our record
IN THE AIR
by keeping our feet
ON THE GROUND...**



In the late 20's we shared Lockheed's thrill in their new Vega—our Finishes were on that ship. Today, Lockheed's Constellation is another air-world sensation. She, too, flies with Fuller Aircraft Finishes!

There's more. Fuller Finishes are on the Douglas DC-6, on Consolidated Vultee's Convair and on the Boeing Stratocruiser.

Our continuing leadership in Aircraft Finishes comes directly from our strict laboratory and field procedure on ALL industrial products. This: "Know the *whole* problem to get the *complete* answer."

All Fuller Aircraft Products now are available in any quantity for private use. Inventories on other Industrial Finishes are being increased as rapidly as materials permit. W. P. Fuller & Co. Factories in San Francisco, Los Angeles, Portland; Branches, Warehouses in principal Western cities.

FULLER
Industrial **FINISHES**



THE WEST— AMERICA'S NEW INDUSTRIAL FRONTIER

FULLER pioneered in '49; became West's largest, most skilled paint makers. We're still pioneering in '46—with NEW products for our Western Industrial frontier!

MAINTENANCE FINISHES

In the field of factory maintenance, Fuller Color Engineering *puts color to work* . . . increases production profit through better employee safety, morale. Write for new, up-to-minute book, or have Fuller representative call with data.

PRODUCTION FINISHES

Under the pressure of war needs, we telescoped years of research on the problems of Plywood finishing. Today, we feel we lead the field. Whether you're interested in sealing Plywood at a mill or in working out a finishing system in the shop, Fuller can give you the right answers.

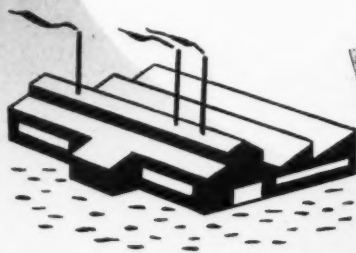
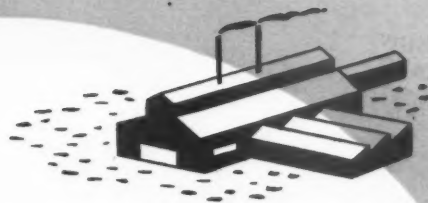
MARINE FINISHES

Mr. Boatbuilder: See Fuller! From a plastic laminated hull down to the lowly dory, we've got a finish for every purpose. (For sea-going ships, too!)

This is

PLASTEEL

THE MODERN ROOFING



- ✓ PUTS PERMANENCE into your Roofing and Siding
- ✓ PROLONGS THE LIFE of your Buildings
- ✓ ELIMINATES constant painting and maintenance
- ✓ RESISTS fumes, heat and cold, salt spray, weather
- ✓ EASY to handle, light in weight, simple and speedy to apply

When you use PLASTEEL roofing and siding you build for permanency! Your first cost is your only cost. Let us send you samples and data. Complete Engineering

Staff is ready to assist you on your building problems. PLASTEEL is available for QUICK DELIVERY. Write, wire or phone--



PROTECTED STEEL PRODUCTS

Standard Life Bldg., Pittsburgh, Pa. • Plant: Washington, Pa.



Proved

THROUGH THE YEARS---

LINK-BELT



Silverlink

ROLLER CHAINS

Modern

AS TOMORROW!

The designer and engineer of today, planning the product or plant layout of tomorrow, will find outstanding advantages in applying this efficient and versatile medium to the solution of design or operating problems in power transmission and conveying.

Positive transmission of power means perfect timing and coordination of machine operations. Shafts in any number, in any arrangement, can be given either direction of rotation, on long or short centers. While

slip or creep is impossible, resilience of chain absorbs heavy shock loads, thereby protecting motor and driven machine.

Depend on Link-Belt Silverlink Roller Chain for efficiency and long service in power transmission and conveying. Write for Engineering Data Book 1957.

V-BELT DRIVES



FROM STOCK

LINK-BELT COMPANY

PACIFIC DIVISION

Plants at San Francisco 24, Los Angeles 33, Seattle 4.
Offices and Warehouses: Portland 9, Spokane 8,
Oakland 7.

10,361-P

SIGNODE

PERFORMS AN IMPORTANT FUNCTION IN INDUSTRY...



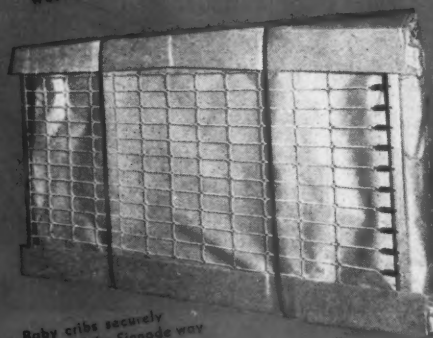
LCL shipment with Signode bulk loading protection



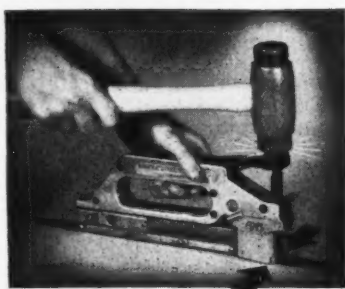
Wool blankets in cartons—steel strapped



Bundling auto springs with Signode Signi Strapping



Baby cribs securely strapped the Signode way



E-Z DRIVE Strap Stapler. Magazine feed for fast stapling. Drives $\frac{3}{4}$ " x $\frac{5}{8}$ " standard 14 ga. staples.

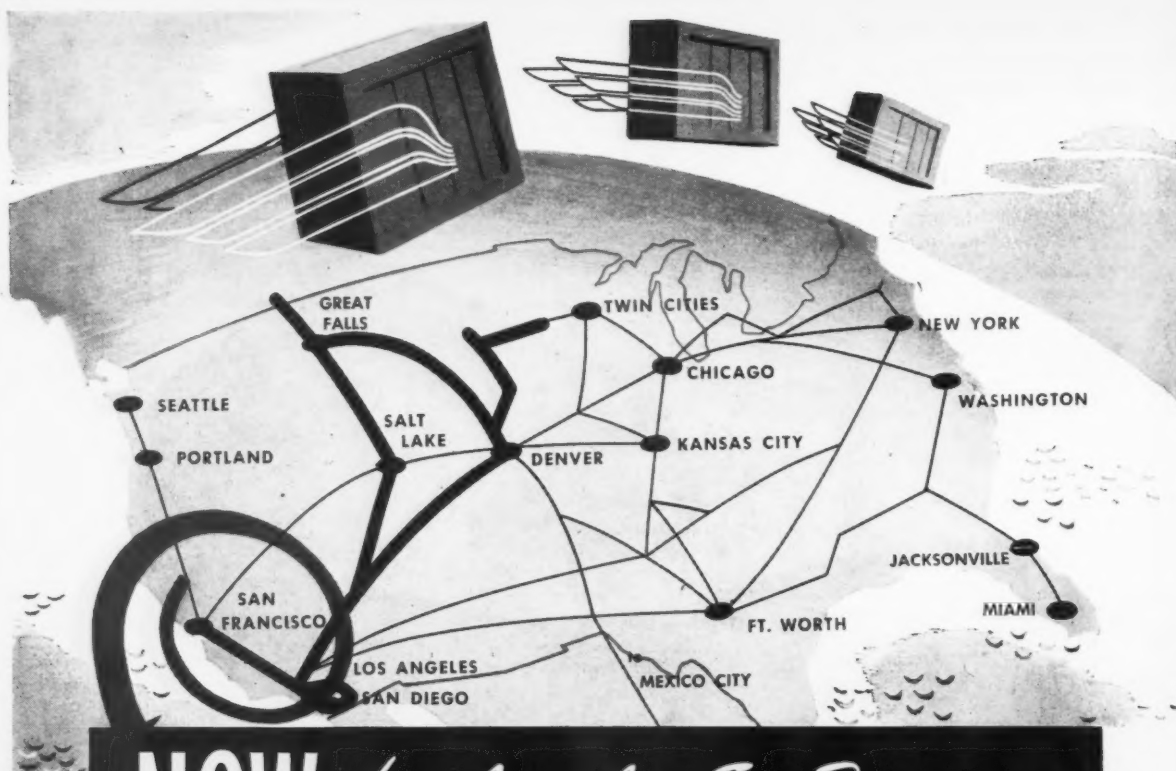
Today—all products are urgently needed. Paid claims cannot replace goods damaged or pilfered in transit. But such losses can be reduced with Signode's **PLANNED PROTECTION**. Applications are engineered to fit individual requirements . . . from small packages to carloadings.

Signode's world-wide packaging and carloading experience is yours to draw on. A representative will gladly offer suggestions to fit your specific problem. **WRITE TODAY.**

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SIGNODE
STEEL STRAPPING



NOW *Los Angeles-San Francisco* **AIR FREIGHT SERVICE**

Regular Air Freight service between Los Angeles and San Francisco is now offered by Western Air Lines. On June 15 this service will be extended to cover Western's entire system, with nation-wide service to follow soon...service shrinking time for delivery of all commodities whose profitable marketing depends on speed. New rates...the lowest in air freight history, offer shippers economical, speedy transportation of their wares.

BACKED BY EXPERIENCE

Western's Air Cargo Engineers are ready to diagnose your shipping troubles and prescribe the right treatment on the basis of lengthy experience and research. For complete information on air freight, air express, or air mail, write Cargo Traffic Department, 510 West Sixth Street, Los Angeles 14, Calif., or 291 Geary Street, San Francisco.

WESTERN *Air Freight* "PUTS WINGS
ON WEIGHT"

WESTERN AIR LINES

AMERICA'S PIONEER AIRLINE

**Engineered for
Every Lifting Need**

RUGER

Hydraulic

FLOOR CRANES



"The most versatile piece of lifting equipment in the plant," say production men in hundreds of industries. It is not limited by overhead rails. The Ruger goes *anywhere* on the shop floor—lifting, moving, "ducking-in" or stacking. It does the tough awkward jobs no other equipment can do. It takes advantage of every foot of floor space. Powerful, rugged and easy to operate—a Ruger and one operator can handle loads up to three tons with ease—"spot" the load with precision. Start saving time, money and manpower with a Ruger—there's a size to fit your job.

- Three time tested models
One, two and Three Tons.
- Extension beam for extra
high lifts and "duck-in" jobs.
- Hydraulic Power—Safe, Sure
and Easily Controlled.
- Roller bearing wheels. Spots
loads anywhere in shop.
- Rolls easily under trucks
and machines.

A SIZE FOR EVERY NEED

- 1 ton—for smaller plants and shops.
- 2 ton—for medium industrial use.
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RUGER EQUIPMENT CO.


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Please send me your folder with complete details and prices on Ruger cranes.

Name

Address

City..... State.....

RUGER  EQUIPMENT COMPANY



REVERE SHEET AND STRIP FOR DRAWN PARTS

FOR all products to be made by drawing, stamping and similar sheet metal operations, Revere sheet and strip of copper or brass offer maximum ease of fabrication. Not only are these metals naturally ductile, but they benefit further from the metallurgical skill which Revere has gained in 145 years of experience.

In composition, mechanical properties, grain size, dimensions and finish, you will find Revere metals highly uniform. They enable you to set up economical production methods and adhere to them. They can help you produce better products at faster production rates, with less scrap and fewer rejects.

Revere copper, brass and bronze lend themselves readily to the widest variety of finishing operations—polishing, lacquering, electro-plating. With these superior materials it is easy to make radio shields and similar products beautiful as well as serviceable.

That is why wise buyers place their orders with Revere for such mill products as—*Copper and Copper Alloys*: Sheet and Plate, Rolls and Strip, Rod and Bar, Tube and Pipe, Extruded Shapes, Forgings—*Aluminum Alloys*: Tubing, Extruded Shapes, Forgings—*Magnesium Alloys*: Sheet and Plate, Rod and Bar, Tubing, Extruded Shapes, Forgings—*Steel*: Electric Welded Steel Tube. We solicit your orders for these materials.

REVERE

COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

230 Park Avenue, New York 17, N. Y.

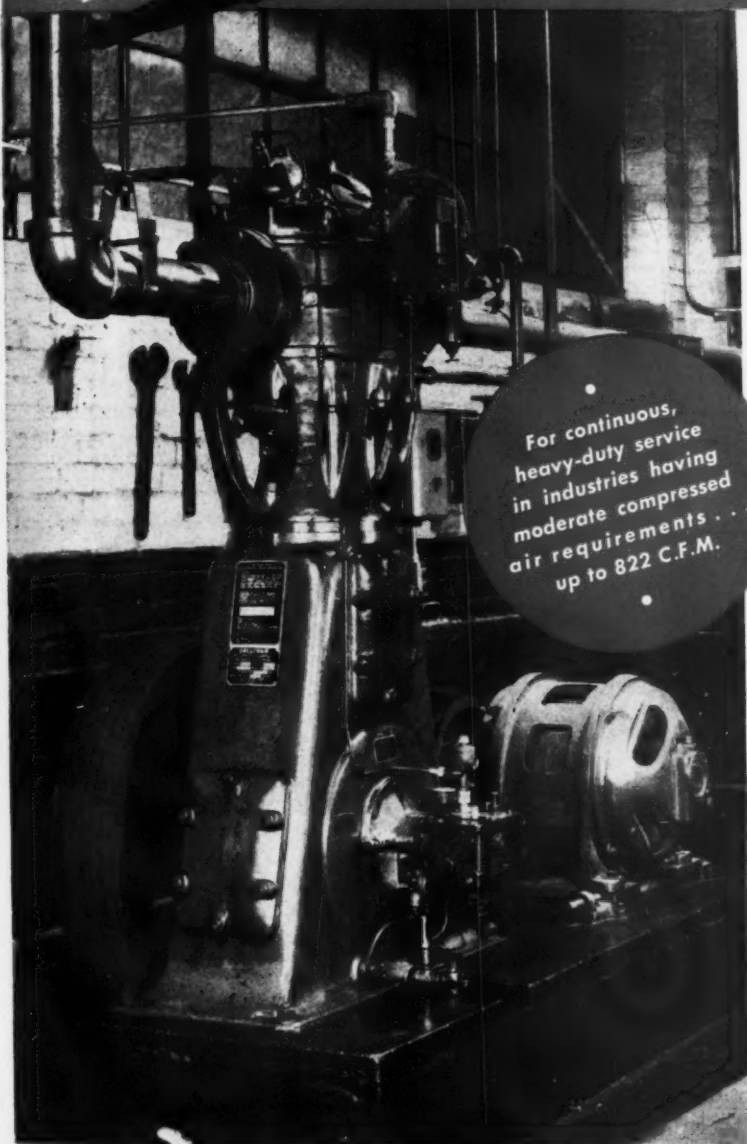
Mills: Baltimore, Md.; Chicago, Ill.; Detroit, Mich.; New Bedford, Mass.; Rome, N. Y.—Sales Offices in principal cities, distributors everywhere

Pacific Coast District Sales Offices in San Francisco, Seattle, Los Angeles



to Exploring the Unknown on the Mutual Network every Sunday evening, 6 to 6:30 p. m., PDST.

the WG-9 another Sullivan modern, heavy-duty compressor



For continuous,
heavy-duty service
in industries having
moderate compressed
air requirements...
up to 822 C.F.M.

• The Sullivan WG-9 air compressor is ideally suited for plants with moderate volume requirements or for specialized uses in large plants particularly where limited floor space is available. It is a double-acting, heavy-duty, single-stage compressor that will stay on the job twenty-four hours a day with the very minimum of maintenance.

Long, trouble-free operation is assured by:

- (1) Cylinder liners replaceable
ON THE JOB
- (2) Full force-feed lubrication to all working parts
- (3) Sullivan patented, long-life, DUAL-cushion valves
- (4) Anti-friction main bearings.

Because of its smooth-running characteristics and the small floor area required, the WG-9 needs only a simple, block-type foundation which can be quickly, easily and cheaply installed right where the air is needed. Available in eleven sizes with displacements from 153 to 822 C.F.M. at pressures from 30 to 150 pounds. Send for Bulletin A-43 for complete details. Sullivan Machinery Co., Michigan City, Indiana. In Canada: Canadian Sullivan Machinery Co., Ltd., Dundas, Ontario.



SULLIVAN

THE WORLD'S FINEST AIR COMPRESSORS FROM 1/4 TO 3,000 H. P.

OFFICES

Birmingham - Boston - Butte - Chicago - Claremont - Dallas - Denver
Duluth - El Paso - Huntington - Knoxville - Los Angeles - Middlesboro
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San Francisco - Spokane - St. Louis - Washington, D. C.

PRODUCTS

Stationary and Portable Air Compressors, Pneumatic Casting Grips,
Foundation Breakers, Portable Hoists, Rock Drills.

Can
you
read
between
the
floors
?



1, 2, 3, 4 — lit up. 6, 7, 8, 9, 10 — lit up. 5 — dark.

Night after night — same story. The force on the Fifth makes the train. The others, hurried and harried, spend extra hours on a treadmill.

Overtime can be necessary — especially during vacations. But lights burning for nights on end are often a sign of inefficient business forms. Here, a Moore specialist can help.

Moore Business Forms, Inc., studies your business forms one by one — in

co-operation with your staff. When a change will benefit, Moore recommends change. Moore spots corners to cut in printing, scrutinizes quantities. In some cases one custom-designed form can replace three or four old forms — reducing laborious recopying and the margin of human error.

An Albany manufacturer writes: "Installation of your four-part Fanfold billing form and three-part Speediset has increased clerical output per hour with no appreciable increase in form

cost." A cement executive adds: "Equally important is the enthusiastic response of our personnel."

Backed by sixty-five years of experience, Moore is prepared to serve businesses of every size and kind — from a corner store in Portland, Maine, to a corporation in Portland, Oregon. For information, call on the nearest Moore division, as listed below, or its local office. *Moore stands ready to supply you with everything from a simple sales book to the most intricate multiple-copy forms.*

AMERICAN SALES BOOK CO., INC., NIAGARA FALLS; ELMIRA, N. Y.
PACIFIC MANIFOLDING BOOK CO., INC., EMERYVILLE; LOS ANGELES, CALIF.
GILMAN FANFOLD CORP., NIAGARA FALLS, N. Y.
COBBY-WIRTH MANIFOLD BOOK CO., MINNEAPOLIS, MINN.
MOORE RESEARCH & SERVICE CO., INC., NIAGARA FALLS, N. Y.
SOUTHERN BUSINESS SYSTEMS, INC., ORLANDO, FLA.
MOORE BUSINESS FORMS, INC. (New Southern Div.), DALLAS, TEX.; ATLANTA, GA.
In Canada — Moore Business Forms, Ltd., succeeding Burt Business Forms, Ltd., Toronto;
Western Sales Book Co., Ltd., Winnipeg and Vancouver;
National Sales Check Book Co., Ltd., Montreal

MOORE BUSINESS FORMS, INC.

ADV. BY H. W. AYER

for cutting any metal



Associated Cutting Oils

The wide Associated line of Cutting Oils is divided into two general groups: *Mineral Lard Oils*, with or without added sulphur. *Soluble Oils*, containing a special emulsifier, to be mixed with water.

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The specialized coolants and lubricants represented in Associated Cutting Oils are individually created to handle high-speed and low-speed jobs,

large and small. Whether your plant is working magnesium, aluminum, steel, or alloys, there is a *specialized* Cutting Oil for that particular job ... one that will save you time, labor, and money. Ask us about these and other created-to-the job Associated industrial lubricants. There is a well-informed Associated Representative in your community who will help solve your problem.

Tell Your Associated Dealer You Want a Credit Card

**Correct Lubrication
is Machinery's Most
Vital Need**



**TIDE WATER
ASSOCIATED
OIL COMPANY**



Rubber Lined STEEL

...FOR HANDLING, STORING AND TRANSPORTING ACIDS

Western Pipe & Steel Company is today producing a steadily increasing number and assortment of rubber-lined tanks and containers. The process being employed "locks" the rubber into the "pores" of the metal, making a bond as permanent as the rubber itself.

The use of rubber-lined steel tanks and containers for handling, storing and transporting corrosive acids and abrasives, and for plating and pickling operations, is constantly growing. This is due to the many advantages of rubber-lined steel, including its great strength, long life and resistance to damage and wear.

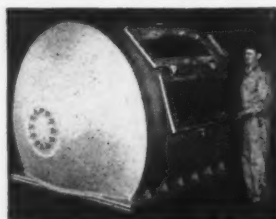
Recent discoveries in synthetics have produced materials that widen the range of acids and abrasives that can be handled, stored and transported in rubber-lined metal containers.

Western Pipe and Steel was one of the first companies in the West to experiment with the bonding of rubber and steel. Its facilities are unmatched for handling tailor-made or volume production items. More than 300 products are being fabricated from steel sheets, plates and shapes.



Rubber-lined tanks being run into Western's huge steam curing tank to complete bonding of rubber and steel.

Western fabricates these welded, rubber-lined steel products: treating and storage tanks of all shapes and sizes, pressure vessels, tank trucks and special containers. Western, also, installs all types of stainless steel and other alloy linings.



Pectin washer drum lined with rubber and tailor-made to meet special installation requirements.



Painting inside tank surface with rubber cement preparatory to applying Superflexite.



Mobile transport tank fabricated and rubber-lined by Western. It will carry acid to be used in fertilizing operation.

WESTERN PIPE & STEEL COMPANY of CALIFORNIA

FABRICATORS • ERECTORS

P.O. Box 2015—Terminal Annex
5717 Santa Fe Ave., Los Angeles 54

Bakersfield, Fresno, South San Francisco, Taft, Calif.; Phoenix, Ariz.



200 Bush Street
San Francisco 6

NOW AVAILABLE!

GOVERNMENT SURPLUS

METALS

FOR IMMEDIATE DELIVERY

THE Western Regional offices of the War Assets Administration have joined together in a cooperative sales offering of ferrous and non-ferrous metals. If items you seek are not listed, you may be able to obtain them through the nearest War Assets Administration office.

COPPER TUBING

Hard or soft drawn seamless, in coils or various straight lengths (crated). Various diameters and thicknesses.

ALUMINUM

Sheets and tubing in various sizes, thicknesses and specifications (San Francisco). Bars, rods, tubing and extrusions, (Los Angeles).

BRASS

Brass pipe, Grade A seamless in 12 to 16 foot random lengths 1/2" to 5" diameters.

PIPE

Small inventories of: cast iron and steel pipe in various sizes; fittings including reduction couplings, tees and elbows; well casing; lap-weld and galvanized pipe; and steel tubing.

VALVES

A broad range of valves in various sizes and materials including wedge gate, swing, check, float, globe and plug, with wheel, wrench or hydraulic control.

CABLE - WIRE ROPE

Choice selection of cable in various sizes (with hemp or fibre core) including guy-wire type galvanized or tinned. Also heavier cables with serration, suitable for bonding, guying, guard rails, etc.

LEAD BASE ALLOYS

Limited inventories of habitbtt and solder. Determine availability through nearest W.A.A. office.

STEEL

PLATES

Sheared or milled plates in wide range of sizes carried in most W.A.A. western inventories.

SHEETS

Limited supply in scattered locations (broken lines). Hot rolled alloy sheets (SAE 9130) from 7 to 14 ga. varied widths from 29" to 70" and lengths from 86" to 168", available from San Francisco inventory.

BAR

Good supply carbon square, and octagon in varying lengths and diameters.

Production bars, round mild steel in 20 foot lengths, available at Spokane or apply to nearest agency.

STRIP

Varying thicknesses and widths (in rolls and flat).

STRUCTURALS

Broad inventory in various dimensions and specifications.

MILL STOCK

Various sizes and analyses, available at Salt Lake City.

**WAR ASSETS
ADMINISTRATION**

*Items offered subject to prior sale or withdrawal.
Buying preference to Veterans of World War II.*

WESTERN OFFICES: Boston Building, DENVER, Alpine 0415 • Power Block, HELENA, Phone 481 • 215 West 5th St., LOS ANGELES, Michigan 6321 • Pittock Block, PORTLAND, ATwater 6401 • Dooly Bldg., SALT LAKE CITY, 5-7503 • Dexter Horton Bldg., SEATTLE, Main 1080 • Columbia Bldg., SPOKANE, Main 5111

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.....

AFTER WORLD WAR I, America showed the world how amazingly mass production methods could lower the price of goods... make them within the reach of millions and, by so doing, create a higher economic standard of living than any other people ever achieved.

This time, *distribution* offers the best opportunities for still greater cost reduction. And more efficient motor transportation is the key to much of the improvement that can be made.

SINCE MOTOR TRUCKS SUPPLY so many of the transportation links in the chain between producer and consumer, their performance affects the distribution costs of practically everything the public buys.

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IN LINE WITH THIS THINKING, no truck owner is likely to have a better opportunity than now to reappraise his truck requirements in the light of the full possibilities of what the best in modern truck transportation can do.

To such a program, White has dedicated its full resources in engineering, manufacturing and service through its nation-wide system of Branches, Distributors and Dealers.

THE WHITE MOTOR COMPANY • Cleveland

FOR MORE THAN 45 YEARS THE GREATEST NAME IN TRUCKS



SILVER MINERS PLAN TO SHORT-CIRCUIT EASTERN FABRICATORS

There's Nothing Personal About It; the Mining Interests Merely Want to Put More Silver in the Lining of Their Economic Clouds

IT looks as if the ghost of Paul Revere, crack silversmith, is about to mount its horse and go galloping westward. The reason is that Western mining men are apparently banding together in the Pacific Northwest for the purpose of building a silver fabricating industry to process the precious metal as it comes from the mines into flatware, hollow ware and other silver products.

According to press reports, a corporation to be known as National Silver Products, Inc., will be formed in Spokane by early June. It will be headed by Frank Lilly, Spokane mining statistician, and will be backed by a group of mining organizations.

Already, says the advance publicity, arrangements have been made for obtaining fabricating machinery costing in the neighborhood of \$500,000 which will be shipped to Spokane for installation in temporary quarters which the organization has already selected. Later, probably by mid-fall when the building materials situation has become more normal, additional quarters will be constructed.

As it does in nearly every new venture in the West, the name of Henry J. Kaiser has already entered the picture. Late in May, Lilly announced that negotiations are under way with the ship-auto-lightmetals, sand-and-gravel magnate for use of the latter's Trentwood Aluminum Rolling Mill for rolling silver prior to fabrication.

Considering the proposed enterprise from all angles it looks as if only one real obstacle still exists—that of getting the necessary workers. Silversmiths in the West are scarcer than the proverbial hen's teeth. Lilly says, "Our biggest problem now is to find the artisans. Most of them are employed in eastern plants, and there aren't very many apprentices."

Just how difficult a problem that may be remains to be seen.

Eastern silver fabricators, naturally opposed to the idea of additional competition, have been established in the New England area and along the Atlantic Seaboard for

centuries. In many instances families of artisans have worked in the same plant for four or five generations. Being artisans, skilled craftsmen, they are popularly supposed to be more interested in their work than in the profit motive.

But that is not the obstacle to moving westward that some of their employers might think it is. Obviously, if an artist can make more money exercising his art in one place than another, it is highly likely that, other things being equal, he would go where he could get more for his skill. Consequently, with higher wages paid generally in the West, it seems quite likely

that the problem of getting artisans will be solved in favor of the new industry. When one stops to think about it, the entire West was populated by men who wanted to better themselves, and those of this particular craft should prove no exception.

There is another side to the picture, though, and that lies in the present controversy that is raging around the price of silver.

Eastern fabricators are anxious to keep the price of silver down. The lower it is the better for their bank balances. They naturally look upon members of the so-called silver bloc in the Senate as so many Captains Kidd in modern dress, each and every one gifted with a diabolical ingenuity for bedeviling them. Accordingly, they are inclined to view the possibilities of a new silver fabricating industry in



• From Western canyons such as this of Idaho's Sunshine Mine, largest silver producer in the country, comes the metal which Eastern plants turn into the silverware that gleams on the sideboards and dinner tables of Park Avenue homes. Now, however, there's a move afoot to do the fabricating in the mining country itself.

the West as a pressure tactic designed to gain support for the projected rise in silver to 90c an ounce and higher.

The fact of the time the story broke gives some logic to their beliefs. First mention of it occurred late in April when ex-Senator Clarence C. Dill, Washington, announced that he was going to the national capital for the purpose of conferring with representatives of silver producers interested in the venture.

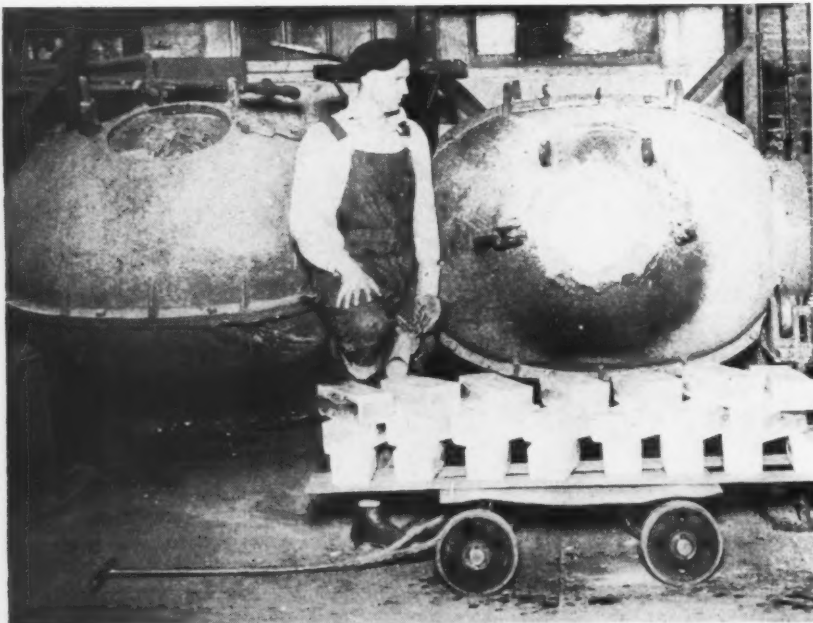
At about the same time Representative Compton I. White (Dem., Idaho) rushed to the Northwest Mining Association copies of advertisements, signed by jewelers, that appeared in Eastern newspapers protesting against the rise in the price of silver. The Association naturally saw to it that the story of this move against silver price increase got full publicity.

Raw Material Costs

Coupled with each of these incidents was testimony given before the Senate Appropriations sub-committee conducting a hearing on the need of more money for silver. The testimony indicated the great spread between raw material costs and those of the finished product in the silver fabricating industry. Committee members saw silver articles offered in evidence with statements by experts as to their silver content.

A teaspoon retailing at \$2.65 held only 50c worth of silver. An ash tray selling at \$6.00 was shown to have a precious metal content of a mere 64c. A cigarette holder that went over the counter at \$8.40 was silver to the extent of only \$1.12 at present prices.

• With both a rise in the price of silver and the establishment of a silverware fabrication industry in prospect, more ingots of the precious metal, like these at the Bunker Hill Smelter at Kellogg, Idaho, will be coming from the busy smelters of Western mines.



With this series of moves coming in quick succession, it is quite understandable that the fabricators should look at the story from Spokane with a somewhat critical eye noting it as just another move in the campaign to jack up the price of their raw material.

Whether or not it is as the Eastern fabricators think, the fact remains that the Pacific Northwest is just as logical a place for a silver fabricating industry as its present stamping ground along the Atlantic Seaboard. Even though it hasn't the necessary artisans, it has the very logical asset of being situated at the source of supply for the raw material, and the problem of getting the necessary workers is not insoluble.

Relative Importance

But important as such an industry might be to the West, it is of relatively small importance when related to the greater question of what effect a silver price increase would have on the West as a whole.

Here in the West, where the greater part of the silver produced in the United States is mined, the price of silver will always be a matter of importance. This is so regardless of whether the price is halved or doubled.

Reason is that silver appears as a by-product in nearly all the mines from which the baser metals, such as lead, zinc and copper, are taken. Since in some mines it is an important by-product it is quite possible that a price of 90c, like that recommended recently by the Senate Appropriations sub-committee, might mean the difference between operating at a profit or a loss.

Accordingly, while there will be a tendency for a rise in price to bring more marginal mines into production, this tendency will not be restricted to those of silver alone. The net effect, therefore, will be beneficial to the mining industry as a whole.

The effect, however, that a substantial rise in price of the metal will have on users of industrial silver is another matter.

While principal uses of this element are for coinage, jewelry and silverware, it is becoming of increasing importance in industry. During the current year estimates of amounts required for general industry total 43,000,000 ounces as compared with a total of 82,000,000 for silverware manufacturers and jewelers.

Nearly everyone is familiar with the importance of silver to the photographic and photo-engraving industries. These, however, will take only an estimated 15,000,000 ounces in 1946. The balance of the 43,000,000 is divided as follows: electrical equipment, 10,000,000; industrial brazing alloys, 10,500,000; dental and medical uses, 1,500,000; engine bearings, chiefly aircraft, 1,000,000, and for miscellaneous industry, 5,000,000.

Any substantial rise in price would naturally have a marked effect on costs to such users as those indicated above. And it would give considerable point to one of their arguments against a higher price—namely, that preferred consideration for silver has an adverse effect on the development of both new and established uses for the metal.

As stated in "Silver in Industry," a book compiled by Lawrence Addicks, properties of the metal "are such that probably only a psychological barrier created by its inclusion in the precious metal 'ounce' class has impeded major expansion" of its industrial uses "long ago."

Evidence of recognition of the importance of silver in industry lies in the expanding use of silver alloy brazing. There, silver's use has become so important in the past few years as to multiply requirements. Amounts of the metal employed in alloy brazing and soldering for the purpose of joining both ferrous and non-ferrous metals vary in a range from 5 to 80 per cent of the amount of alloy or solder used for a specific job.

Expansion of silver's use is also expected in electronics, medicine and the production of containers.

But whether the price of silver goes up or stays down, to the benefit of miners on the one hand and industry on the other, it will have no effect on the establishment of the proposed silver fabricating industry. For as long as silver is mined in the West it will be a natural development for it to be fabricated into silverware there also.

U. S. Steel Offers Western Basing Point In Geneva Deal

IF the government accepts the bid of United States Steel Corporation for the Geneva steel mill, the eventual outcome apparently will be a hotly competitive market on the Pacific Coast whenever supply begins to catch up with demand, and with the coast on a competitive price basis with the rest of the country as the result of a Geneva basing point and an adjustment of the freight rate from Geneva to coast ports.

For the immediate future, with steel orders booked far into next year, and wage increases also standing in the way of any downward trend in prices, whatever decision is reached by the government regarding Geneva can hardly affect the situation. But in the long run, when ability to serve the market is the big factor, United States Steel will have to match its Western production facilities and Geneva price advantage against Bethlehem's expansions at Sparrow's Point, South San Francisco and Los Angeles and its big new warehouse at San Francisco and against Fontana's proximity to the Los Angeles market.

United States Steel's bid provides for making Geneva the basing point for all products produced at the mill, and the Western States Council steel committee, in urging War Assets Corporation to accept the offer, announced that this was one of the principal points on which its recommendation was based.

The committee, however, requested that U. S. Steel eliminate from its bid the statement that "In the active markets for steel on the Pacific Coast, Columbia Steel (the subsidiary in whose name the bid was entered) has always endeavored to price its products competitively and proposes to do so in the future." The committee's objection was that this indicated U. S. Steel would meet its competitors' prices, whereas it should take the lead in setting of prices.

Profitable operation of Geneva will be dependent to a large degree upon a reduction of freight rates to the coast, the bid stated, although the bid was not contingent upon this factor.

Apparently the U. S. Steel purchase offer, which may be withdrawn after June 15, 1946, was based on a valuation of \$52 an ingot ton for Geneva, as compared with the average valuation of \$48 an ingot ton for the manufacturing facilities of the entire steel industry. The corporation proposes to pay \$47,500,000, of which \$7,500,000 is inventory which the government may sell to the corporation if the government desires. The terms are \$5,000,000 down on the conveyance of the title to the property, \$7,500,000 on transfer of the

inventory, and the balance of \$35,000,000 to be paid at the end of two years.

U. S. Steel agrees to install not less than \$18,600,000 in additional facilities to bring the hot-rolled coil output up to 386,000 tons a year. These coils will be converted to cold-rolled sheets and tinplate at the Columbia Steel plant at Pittsburg, Calif. in a \$25,000,000 mill to be built there. Total investment by U. S. Steel would thus be \$91,100,000.

Colorado Fuel & Iron Corporation, who submitted the only other complete bid (the remainder being in the form of letters), offered to form a new corporation with \$25,000,000 working capital and take a 15-year lease on Geneva to be paid at the rate of \$2 a ton of finished steel produced per year. The government would be expected to make \$47,000,000 in improvements at Geneva, and CF&I would take an option to purchase the plant at the expiration of the lease, or before, at a figure to be set by a board of appraisers, but in no event to be less than \$80,000,000.

Kaiser Co. did not bid, but asked for a proportionate adjustment on Fontana.

A summary of the remaining bids is as follows:

J. S. Warshaw, industrial consultant, 50 W. 77th St., New York City. (a) To purchase the plant "as is" for two-thirds of the "as is" value,

with a down payment of 50 per cent of an agreed purchase price, balance in 20 equal payments without interest. (b) Lease "as is" on a rental-purchase basis. (c) Operate the plant for the government with an equal division of profit.

Riley Steel Co., 7105 S. Alameda St., Los Angeles. Fred Riley, president, youthful discharged service man, antecedents unknown. Proposed to buy the property for \$135,000,000, with a down and annual payment of \$12,367,102 and interest on the purchase price over 18 years of \$48,000,000. Would require a loan of \$28,844,000 from the government for additions to the plant.

Pacific American Steel and Iron Corp., Seattle. Jay Siever, president. President of Siever Engineering Co. and former employee of Day and Zimmerman Co., industrial engineers. Principals of the company reported to be Geo. Murphy, head of the Portland Spar Co. of Portland, Harry Murphy, H. J. Landahl and Thomas Smith, warden of Walla Walla penitentiary. Thurman Arnold and Abe Fortas, leading New Dealers, reported to be attorneys for Pacific American. Bid of \$40,500,000 payable over 20 years with 2 per cent interest; require loan of \$25,000,000 for plant additions. Alternate proposal government turn Geneva over to Pacific American and provide \$25,000,000 loan upon the understanding that original cost of Geneva and the loan would be repaid from plant earnings.

Assets Reconstruction Corporation, 908 N. Van Ness Ave., Los Angeles. R. E. Clapp, president. Retired real estate broker. Offered \$38,750,000 "as is" and stand the cost of adding required facilities.

Blue Star Enterprises, 312 Kearns Bldg., Salt Lake City. Telegraphic bid of \$302,000,000 withdrawn. Apparently a "joke" bid.

NOT ENOUGH STEEL EVEN AT THIS POSTWAR LOW

In January, 1946, when war work was all over except for 37,500 men working in the West Coast shipyards (a figure more than offset by the 50,000 men forced out of work by the machinists' strike in the San Francisco Bay area), manufacturing employment in the West was 50% above prewar.

(From U. S. Bureau of Labor Statistics estimates. January 1946 figures preliminary)

Pacific States	Jan. 1939	Jan. 1946	Gain or Loss	Percent
California	336,000	567,000	231,000	68.7%
Oregon	70,200	76,000	5,800	8.2
Washington	102,000	136,000	34,000	33.3
Total Pacific	508,200	779,000	270,800	53.2
Mountain States				
Arizona	8,000	6,800	-1,200	-15.0%
Colorado	29,300	47,600	18,300	62.4
Idaho	10,300	17,100	6,800	66.0
Montana	11,200	9,600	-1,600	-14.2
Nevada	1,100	1,300	200	18.1
New Mexico	3,900	8,100	4,200	92.8
Utah	15,300	15,200	-100	-0.5
Wyoming	3,800	5,300	1,500	39.4
Total Mountain	82,900	111,000	28,100	33.8%
Total 11 West. States	591,000	890,000	299,000	50.5
Total United States	9,535,000	12,038,000	2,503,000	262.0

Offsetting Lower Wages Of The East by Increased Efficiency

YES, wage rates are high on the West Coast. As is brought out by Mr. Brown in the boxed statement appearing on this same page, Eastern and Middle Western manufacturers in a number of fields already are demonstrating their ability to lay down their product in Pacific Coast cities at a figure that is frighteningly lower than current prices in Western markets.

Hourly rates admittedly are high in Los Angeles and other Coast cities—in fact, they stand in the top rank among the nation's industrial areas. But hourly costs are but one side of the picture, and before any Western manufacturer prepares to raise his hands in surrender, he should convince himself not only that his unit costs are lower than his local competitors, but also that they have been driven down to a sound economic competitive minimum.

Unless he has made, within the past 30 days, at least one change in production technique that has cut per-unit cost, he obviously is asleep on the job and will soon find himself in an increasingly diminishing market for his goods and services.

High hourly labor costs also can be the lowest per-unit cost, as Henry Ford demonstrated nearly half a century ago. Mr. Ford probably was not the original discoverer of this principle, and certainly he has had no monopoly on it.

Records of the current experiences of some California manufacturers who not only recognized the unit cost problem but *did* something about it, show that the unfavorable comparison with Eastern pay rates can be more than overcome through the key factor, *productivity*.

Here are two recent cases in point:

Two manufacturers (A and B) were

By E. K. YOUNG
Industrial Engineer
Los Angeles Chamber of Commerce

producing an identical product in the same city. "A" had an average hourly rate of \$1.25. "B's" average rate was \$1.00. Their cost of production, however, was identical. Why? Because "A" company's rate of hourly production was 20 per cent greater than that of "B" company.

Under such circumstances, can officials of "B" company expect to increase their production 20 per cent at their going hourly rate? Very unlikely—nor can they expect to obtain the necessary increase in production by raising the hourly rate 25 per cent. "A" company undoubtedly will have the most satisfactory industrial and personnel relations, and will be in the best competitive position.

As a matter of fact, what the "A" company management did was to increase their production, and raise—not lower—hourly earned rates paid employees—yet the final result was to reduce the cost of production. Let's take a look at the factors of production and see the cost results in each case.

1. **IMPROVEMENT IN PLANT LAYOUT**—"A's" production line looked like the first picture in the accompanying illustration. After relocating ten machines and constructing a small component store room, it looked like the second picture. Production increased 10 per cent; cost went down nine per cent. Confusion as well as work-in-process delays were reduced materially and quality improved.

2. **METHODS ENGINEERING AND IMPROVEMENT**—"The old way of doing the job is good enough." This is never true. World War II production records were

not built on that long-outmoded principle.

A study made for the U.S. Senate's Committee on Military Affairs, entitled "Wartime Technological Developments," lists 1471 new ways of doing things developed since 1940, and this group is infinitesimally small compared to the myriads of new processes in the entire national picture.

"A" company engineers and supervisors reviewed every operation performed—method, tools and equipment; made 49 changes in hand operations, jig-fixtures and tools; then asked employees for ideas and suggestions. Improvements are still going through and there is no end in sight.

Production increased 11 per cent, while cost went down another 10 per cent.

3. **MATERIALS HANDLING**—Materials handling was primarily simplified by the improvement in plant layout, but that alone did not solve all of the problems. Special trays whose use permitted certain operations to be performed without removing the parts, and tote boxes for easy access and mobility, were developed.

The addition to the sub-assembly department of a component parts storeroom, and adoption of the practice of delivering component parts in assembly units, kept operations at top speed, reducing the personnel required and hence the cost of material handling.

Production was increased 5 per cent, cost reduced 6 per cent.

4. **WORK SIMPLIFICATION**—Work simplification was begun by improvements in plant layout and the subsequent improvements in material handling, but the real job was only started. Individual operations and jobs next were studied and analyzed.

HIGHER SCALES ON WEST COAST POSE A DIFFICULT PROBLEM FOR METAL TRADES

(From published statement of Eltinge T. Brown, Manager, Southern California Metal Trades Association)

At this moment (January, 1946) tons of steel and iron castings are being manufactured in the Middle West and East and shipped into Los Angeles for 2¼ to 2½ cents per pound less (freight charges included) than they can be obtained locally.

Although costs of raw materials are naturally somewhat lower in the East, eastern foundry workers are no more efficient and eastern management is no better. What is the reason for such a great differential?

An examination of the government's wage survey reports for steel and iron foundries reveals the major explanation for the situation: Comparing all regions of the United States, the Los An-

geles-San Francisco area is third highest in average hourly earnings. Only Detroit and Seattle are higher. The average hourly earnings in all steel and iron foundries in the United States is 98 cents. The Los Angeles-San Francisco average is \$1.08.

In actual wage rates for key production jobs in the steel and iron foundry industry, this same California area is equal to or higher than any other region of the nation. The coremaker in the East averages from \$1.03 to \$1.20 per hour. The United States average is \$1.19 per hour. The Los Angeles-San Francisco average is \$1.29 per hour.

The national average for molders is \$1.19 per hour; the Los Angeles-San Francisco average is \$1.29.

Average hourly earnings are 10.4 per cent greater than the increase in the cost of living, and hourly earnings are not subject to reduction without permission of the United States government.

In the light of these facts, it is easy to understand why steel and iron castings are being manufactured in the East and delivered in Los Angeles at much lower prices than they can be manufactured locally. Increase the present labor costs in Los Angeles even 1 per cent and Los Angeles may find itself out of competition with the rest of the United States. Extend the wage increase to other metal trades industries and Southern California may cease entirely to be a factor in American industrial life.

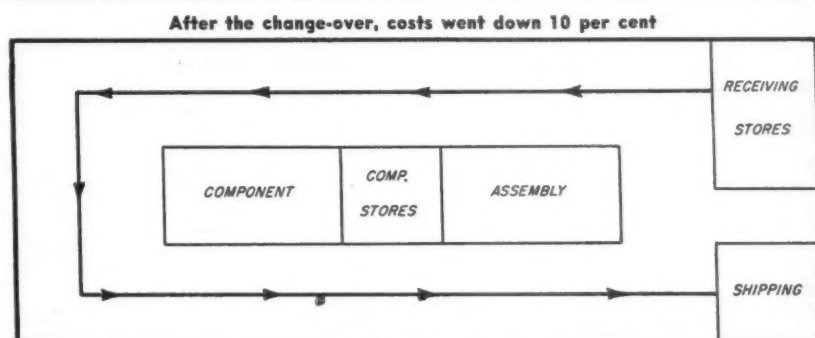
The results were noteworthy in improved production, as well as employee morale.

5. **WAGE INCENTIVES**—When the program of improvement for the equipment and material factors of production had reached a point where the most obvious and specific remedies had been applied, it was time to begin the development of standards for measuring employee physical effort and ability to perform assigned tasks.

Many employers, it should be emphasized, have failed to get the proper perspective on incentives because they gave too much thought to direct labor cost, too little to the indirect or overhead cost. *Larger productive output for a given overhead will reduce total cost.*

"The employers can well afford to pay higher wages per piece even permanently, provided each man and machine in the establishment turns out a proportionately larger amount of work. The truth of the latter statement arises from the well-recognized fact that, in most lines of manufacture, the indirect expenses equal or exceed the wages paid directly to the workmen, and that these expenses remain approximately constant, whether the output of the establishment is great or small.

"Many manufacturers, in considering the cost of production, fail to realize the effect that the volume of output has on the cost. They lose sight of the fact that taxes, insurance, depreciation, rent, interest, salaries, office expenses, miscellaneous labor, sales expenses, and frequently the cost of power (which in the aggregate amount to as much as wages paid to workmen), remain about the same whether the output of the establishment is great or small."



Here's how "A" company applied this principle to a typical operation in its plant. The comparison is actual and not in the least unique. The job was one of rough grinding on steel castings—hard physical labor, under difficult conditions. Method and material handling factors were improved and production was increased, to a degree. Day work wages were paid, yet production still was not adequate.

men learned how to proceed with their work in the correct sequence. After improved methods and working conditions had been put in effect under this standardized plan, detailed time studies were taken, and the work was then placed on an incentive pay basis.

The result was startling. Below is the whole story in three phases: (1) the job under normal day work conditions, (2) the job after operational analysis and method improvement, and (3) the work after time study had eliminated other inefficiencies and the worker was receiving incentive wages.

To stop at this point would be to fail in the purpose of showing the full effect of wage incentives on cost reduction.

With Day Work (Phase II)

Direct labor cost	\$.64
Overhead cost	.92 (\$1.15 x 8 hrs.)

With Incentive (Phase III)	\$1.56	dir. labor & O.H.
Direct labor cost	\$.60	
Overhead cost	.86	(\$1.15 x .75 hrs.)

\$1.46 dir. labor & O.H.
The results are obvious, and economically

sound beyond any doubt. High hourly rates do not demand high costs; they make for high costs *if not controlled*.

In the foregoing example, the production increase for all factors was 108 per cent from the pre-analysis basis to the final determination of the results of the wage incentive, as follows:

Cut in direct labor cost.....	40%
Cut in overhead.....	25%
Net reduction in production cost.....	108%

West Coast industry *can* compete with all other areas in the United States without the necessity of reducing the going average hourly wage rate.

"Time Out For Briefing" Might Solve Today's Biggest Problem

BETWEEN 1941 and 1945 there were 14,000,000 Americans in the armed forces and 60,000,000 in the production forces of this Republic. They were comrades-in-arms and comrades-in-production with the men and women of Russia, Britain, China and the other United Nations.

These 60,000,000 American producers hit the target of Continuous Maximum Production. The avalanche of products they turned out, distributed among the men of the United Nations, smothered in defeat the most ruthless enemies the world has ever seen.

It is my conviction that these same men and women will continue to hit the target of Continuous Maximum Production if each individual thoroughly understands why it is to his own self-interest to do so.

We did the trick in war.

Can we repeat it in peace?

No free nation ever has—and yet, the attainment of Continuous Maximum Production and Distribution in peace will mean that every individual American Citizen will experience a security, a happiness and a satisfaction in life never enjoyed by any citizen of any nation in the history of the world. That is the challenge right now in Seattle, and everywhere else, for that matter.

What We Need to Succeed

If we accept this challenge, if we really mean business, what then?

Then there isn't the slightest doubt but that we can smother in defeat our peace time enemies—individual insecurity, want, fear, indifference and frustration. Through Continuous Maximum Production and Distribution, we the American people, can raise the banners of Individual Security, Plenty, Confidence, Enthusiasm, and Enterprise—raise them high into the winds of the world for every man to see and to follow, if he chooses.

Fine, you say, but how?

By taking time out for Industrial Briefing of every American, regardless of race, creed or color.

Let's begin by briefing a few fundamental facts.

Every employee in Seattle has an average personal investment in Seattle of approximately \$7,000 in his home, its furnishings, his education, and transportation.

That which he wants most is to protect and improve this investment.

He *cannot* do it alone. He *can* do it by teaming up with an employer.

By RODERICK OLZENDAM
Consultant in Industrial and Public Relations,
Tacoma. (Address before a city-wide Seattle
meeting March 26, 1946, sponsored by the
Seattle Advertising and Sales Club.)

Every employer in Seattle has an investment of approximately \$6,000 (the national average in productive enterprise) in the position the employee is to occupy.

That which the employer wants most is to protect and improve his \$6,000 investment.

He *cannot* do this alone. He *can* do it by teaming up with the employee.

There is but one way for the employee and the employer to protect and improve his personal investment.

Real wages are determined by the product produced per American Citizen.

The only way to increase real wages is to increase the output per American Citizen.

The output per American Citizen is determined by the amount of money invested per Citizen in each position and in the attitude of mind that Citizen has towards the position, towards his associates and the enterprise.

These are basic economic and psychological facts. How many of us really understand them? Judging from what has happened since V-J Day, it would seem that the number is limited?

Why?

Because we never have taken Time Out For Briefing.

Ten minutes is the average amount of time American Enterprise devotes to Briefing, "interviewing," or "hiring."

We never have taken the necessary time to discuss these economic truths forward and backward, inside and out, so that nobody can possibly misunderstand them. And so, we never have attained the goal of Continuous Maximum Production and Distribution, except when the nation was at war. My associates and I believe we can reach this highly desirable goal in peace time through Industrial Briefing.

Why Briefing?

Every American flyer who went on a mission in World War II was first briefed on the target, the weather, the possible dangers, the condition of the machine to be used and his personal responsibility in hitting the target. His personal *physical* life depended upon his carrying out this briefing for Destruction.

We propose that every American, whether a Producer or a Distributor, be personally briefed regularly on the industrial tar-

get, the economic weather, the possible dangers, the machine he is to operate and his self-interest and personal responsibility in production and distribution. His personal *economic* life depends upon his carrying out this briefing for Production and Distribution.

Briefing starts with the head of every American Enterprise, who briefs himself first. He does this by asking himself ten questions which have been prepared in cooperation with my employer friends.

These are honest, penetrating questions which have arisen out of a lot of hard-boiled experience. When frankly answered by the head of every Seattle enterprise and by the head of every enterprise in the United States, Seattle leading, the present local and national confusion, perplexity and bewilderment will begin to dissipate. A New Spirit will be infused into American Enterprise from Coast to Coast—The Comradeship of Production and Distribution.

When the head of each enterprise has honestly answered these questions and has convinced himself that it's time for him to act more constructively and continuously in his own company, the first step has been taken.

The second involves the briefing of all members of the management staff, including all supervisors and foremen. They should be so thoroughly schooled that they, in turn, will be in a position to regularly brief employees in their departments. Once the management staff is on the beam, then briefing of all employees follows.

Lays a Strong Foundation

The object of Industrial Briefing is to lay the mental foundations for a solid, unshakable structure of human relations in industry and commerce.

When these foundations are well and properly laid, measurable results will begin to be evident in a diminishing of the prevalent Suspicion now corroding the relations between employers and employees.

As the curve of Suspicion drops, the curve of Confidence will rise and that will mark the beginning of a new era in America.

That new era will not be distinguished by the atomic destruction of the human race. Men will have raised up the only possible defense against atomic destruction—an indestructible mental bulwark of confidence in each other and in their mutual destiny—The Pursuit of Happiness through Unity.

The atomically powerful chain of reaction that will bring Confidence between

TEN QUESTIONS FOR ALL BRACKETS OF MANAGEMENT AND LABOR TO ANSWER

1. Do you blame somebody else for the present situation in industrial relations?

- Politicians?
- Labor Leaders?
- School and College Teachers?

2. What did you do to try to prevent the present situation in industrial relations?

Have you ever talked to an employee about where wages come from?

Have you taken time out to explain to an employee, so that he really understands, the unalterable economic fact that Continuous Maximum Production and Distribution is the only source of steadily increasing real wages?

Did you ever take the trouble to demonstrate to an employee why it is to his self-interest to make a maximum, not a medium or a minimum contribution to production every day? Has any representative of yours ever done so?

3. Do you know how much of an investment your enterprise has in each position you hire an employee to fill?

Did you ever make this clear to an employee?

4. Do you know how much of the total income of your enterprise goes to employees after you have paid all your bills for doing business?

Do your employees know this?

5. Do you personally know how much of

an investment each employee has in the community?

- In his home?
- Its furnishings?
- His own education?
- His means of transportation?

6. Do you know with whom your employees have discussed their relationship to your enterprise?

Was it with a timekeeper, with an especially trained person, a foreman?

Each person on your payroll spends the better part of his life working in business with you, or your representatives. Do you know whether one of your employees has ever talked for more than ten minutes with a representative of your enterprise about the enterprise?

Did the interview take place in a general room under confusing and noisy circumstances, or in a private room with the easy opportunity for a good exchange of experiences and ideas?

7. Do you know for sure what your "personnel man" or your timekeeper has said or is saying about your company, its policies, its program, to employees now on your payroll or those being hired every day?

Do you take it for granted he is doing a good job?

Did you personally ever discuss his position with him?

8. Did you advocate and support, or did you

oppose, these now nationally accepted programs?

- The shorter work day?
- Gradually increasing real wages?
- Collective bargaining?
- Government insurance against death, illness, accident, old age and unemployment?

9. What have you personally done to place the human relations in your enterprise on an enduring American basis?

10. Do you consider yourself a convincing salesman—a leader of the American System of Enterprise? How many people have you sold? Were they mainly those who naturally agree with your viewpoint?

Could you extend your personal influence and effort more widely among your own people, in your community? Shouldn't you?

Do you pay dues to some organization and then expect somebody else to do your selling for you, to keep you out of hot water and to improve your industrial and public relations for you?

Do you think employers are inclined to wait until their industrial and public relations get into a jam and then to take some improvised action on the spur of the moment, hoping to heaven it works?

When the crisis is passed, do employers relax and do little in a fundamental way to prevent another crisis?

What more important job do you personally have than Human Engineering beginning to day in your own enterprise?

American men can be touched off by you yourself, now, in your own enterprise, through Industrial Briefing.

Briefing takes place in a small, private, comfortable office in which both employer and employee are at ease. In large establishments employees will be briefed in small groups, because of the time factor. The time involved approximates an hour for each individual or group.

Briefing means a summary, a review, a condensing, the making of a long story short. Through briefing an employer talks with each of the employees associated in business with him in a friendly business-like manner on matters of mutual interest. Some of the matters which they go over together are these:

When the employee joins your enterprise, he is no longer a "worker," a "hired hand" or a "wage slave." He is a Business Associate of yours and you carry on all your relations with him in that spirit.

You leave no doubt in his mind that he will "belong" to a well-trained, progressive team, regardless of his race, creed or color.

You show him you know his contribution, skilled, semi-skilled or unskilled, is necessary to success.

You tell him about your enterprise, its background, what has been accomplished in peace and in war, what your plans are for the future and how he can fit into those plans.

You impart to him something of the spirit of the enterprise which has grown up through the years. You make him want to build himself into a valuable player on the team.

You reflect some of the pride you and your associates take in turning out a quality product your customers appreciate having; how this is important to the community.

You take plenty of time to make it clear where wages come from. Many Americans are hazy on this point. They would appreciate the chance to hear it simply and clearly explained and have the opportunity to ask you some clarifying questions.

You let him know that you, the employer, will pay him, the employee, and his associates between 50 and 85 per cent of the total income of the enterprise, after all bills for doing business have been paid.

You go over with him his position and that of his family with respect to existing security programs, governmental and private, against the risks of death, accident, illness, old age and unemployment.

You endeavor to leave no doubt in his mind that he can best protect and improve his personal investment of \$7,000 in Seattle by making not a minimum or a medium, but a maximum contribution to production.

You incite his imagination by making it clear to him that you do not feel that

every job is being done perfectly in your enterprise. On the contrary, if he develops any ideas for improving operations, you welcome his contributions—you not only welcome them, but you pay him for his ideas.

It is perfectly natural in briefing that you will touch on the subject of his self-interest, physically and financially, in avoiding injury. The details of this will come later when the employee is actually briefed on his job by his supervisor.

These are a few of the natural subjects that you will summarize, review and condense, as you visit with this American Citizen, who is to be associated in business with you.

As he leaves your office you give him a handy booklet containing the facts you have briefed for him.

The employee is then personally introduced to his prospective supervisor who does the employing. If the supervisor employs the individual, he introduces him personally to his fellow associates in that department.

A month later and every six months thereafter the employer brings the employee up to date, briefs him, on the developments of the past six months—on all matters in which they are jointly interested, the knowledge of which helps the progress of the enterprise and hence the progress of every person associated with it.

New Fame For Reno—Soon May Be Industrial Center

Reno's Ideal Labor Conditions, Climate, and Transportation Facilities, Begin to Attract Eastern Manufacturers Competing for Western Market

COMES now Nevada as a manufacturing center. Not the Las Vegas area, where the chemical development is a story in itself, but Reno.

Three Eastern manufacturers are establishing plants in the Reno area for several reasons, including the labor market, climate, transportation facilities, tax structure, living conditions, proximity to both raw materials and market. Possibly the present trend toward industrial decentralization also has had some influence.

Seaman Motors of Carson City, a branch assembly plant with its main offices in Milwaukee, Wisconsin, manufacture all but precision parts and assemble agricultural tillers and industrial tractor-operated mixers.

Steel Conversion Corporation of Sparks, formerly of Pittsburgh, Pa., will specialize in tools for both construction and industry and service to the fields.

Rocky Mount Manufacturing Co. of Rocky Mount, Virginia and Reno, will make the patented R.O.W. removable windows for home installations; most of the parts will be shipped to Virginia for assembly but between 25 and 40 per cent will be assembled in the Reno plant for Western distribution.

Labor May Be Happy

G. A. Duemling, president of Steel Conversion Corp., believes labor will be more efficient in the high, dry climate, healthier, and better satisfied where the job is only a few minutes' drive from home. His organization has received numerous applications from both former employees and other Eastern skilled workers who want to locate in this area for various health reasons.

His labor will be mostly skilled machinists, tempering men and the like. Approximately half will come from the East. To supplement these the labor pool established by the Southern Pacific for its shops in Sparks will be drawn on. The same wage scale as S. P. will be maintained.

The plant superintendent for Seaman Motors at Carson City, John A. Shaughnessy, trains his own men. This, he has found, is the most satisfactory for his small plant where his men must know more than one operation. His needs never exceed ten men. These come from the local farming community and are trained on the job.

A. L. Kerper, general manager for

Rocky Mount Manufacturing Co.'s Reno plant, expects to employ some 400 workers, with 30 to 40 per cent of them women. Skilled labor will be used as available, but he expects to train some on the job.

Only key men are from outside the local territory. Alf Hornseth from Oregon will be head of the cutting department; Chet Atkins, Westwood, California, in charge of incoming lumber; Harris Vaughn, Rocky Mount, Virginia, manager of production; F. E. Charest, Rocky Mount, plant superintendent; C. F. Smothers, foreman of machine department, from Reno, as is Chet May, the office manager.

Both the Sparks and Reno plants are located near railroad main lines; the Rocky Mount plant is being built directly south of the Western Pacific and has a spur on the other side for loading out.

Raw Materials Close

A substantial saving will be effected by the proximity of the Western Pacific's location to the source of California pine. In weight alone, 20 per cent is saved in not shipping waste across the country. Steel Conversion Corp.'s plant is situated near the Southern Pacific tracks, and is

considered perfect for serving the mining and industrial West, as well as the Orient.

Seaman Motors sacrificed transportation speed to gain less overhead in a low rent area. They are served by the Virginia-Truckee Railroad which takes an additional day to get shipments out of Reno, 30 miles away. Truck transports serve Carson City, but the line has only a part-time agent; delays are inevitable with the set-up.

Both Seaman Motors and Steel Conversion Corp. will manufacture for the eleven Western states, while the Sparks plant will also export to the Orient. Rocky Mount Manufacturing Co. has a franchise covering the East Coast south of New York and five Western states, California, Nevada, Arizona, New Mexico and Utah.

Sales Location Ideal

The location is ideal from a sales viewpoint for all three concerns, as well as their proximity to raw materials. Although President Duemling expects to continue buying his steel from Allegheny where he can obtain his specified alloy, he plans to buy wholly from a Western mill as soon as feasible.

Freight rate on hollow drill steel from the East is 3 cents, compared to 68 cents on their finished product. This fact has materially affected the company's decision to locate in the center of the mining territory.

Not that any of the three are admitting they have any competition. And for the present, production will be limited by the shortage of raw materials and, as in the case of window sashes, government restrictions of sales, rather than by demand.

As one remarked, "If you want to sell, you won't have it long!" This is true of almost any product now, and by producing here they are in a good position to advertise and build good will for the future when competition does arrive.

Both Timken and Ingersoll-Rand manufacture mining tools, but only as a side line; these are Steel Conversion Corp.'s only competitors this side of Pittsburgh, and the freight rates will aid on the latter score. In addition, David J. Catrow, head of the engineering department, will be able to offer a complete engineering service in the field as well as shop service to customers. Mr. Catrow was formerly with General Motors in Detroit.

James Walsh, sales manager for the steel plant, will maintain headquarters in Los

WHAT AN INDUSTRY EMPLOYING 150 PERSONS MEANS TO A COMMUNITY

(As presented to Oregon Interim Tax Study Commission by Chester K. Sterrett, Manager, Industries Department, Portland Chamber of Commerce.)

1. A plant investment of \$100,000.
2. An annual payroll of \$200,000.
3. A livelihood for 1,000 people.

Indirectly, an industry of this size supports:

1. A dozen retail stores.
2. Sales and service for 200 automobiles.
3. A ten-room schoolhouse.
4. Numerous public improvements.
5. Opportunity for a dozen professional men.
6. \$60,000 annual revenue for railroads and other transportation agencies.
7. A yearly market of \$300,000 in agricultural and other farm products.
8. An annual expenditure in trade of a million dollars.
9. A total taxable valuation of \$1,000,000.

Angeles in the Petroleum Building. He will have salesmen to cover the eleven Western states. I. R. Whiteman will be in charge of the sales and export office at 690 Market Street in San Francisco.

Seaman Motors is more concerned with getting precision parts with which to complete machines than with competition. Strikes in the East have brought the Carson City plant to a virtual standstill, although it is arranged and equipped to manufacture and assemble a maximum of 15 machines a week.

Mr. Shaughnessy says frankly, "We can't make enough to supply one dealer." A. D. Aldrich, sales manager for the industrial machines, says he cannot give dealerships until production can be raised, so, for the present, the mixers manufactured are being sold directly from the plant to construction companies and the Nevada State Highway Department.

Agricultural tillers are sent to the Peerless Equipment Co. of Los Angeles, which has handled Seaman exclusively for four years, and to Buran Equipment Co. of Oakland. As soon as production warrants it, dealerships will be granted in all of the eleven Western states. Mr. Shaughnessy believes he makes a product so superior to anything else on the market in both sturdiness and versatility that competition is nil.

The Rocky Mountain plant will make a patented window sufficiently different and novel in its design that it may appeal to a very wide public. However, it will sell for relatively little more than the unpatented product which it is designed to replace, and will be furnished in all the stock sizes that are demanded. For the duration of the recent government restrictions on sale of construction materials most of the product will be sold to prefabricators of homes.

Low Taxes Favor Industry

Nevada's lenient tax laws are well known throughout the country and will encourage other manufacturers to consider Nevada when a new location seems inevitable. Liberal corporation laws add to the incentive. All admit the tax structure in Nevada is less terrifying than in the more heavily populated areas of the East, and will materially aid in keeping cost of production down to a minimum.

The Carson City plant which is set up in the old Virginia and Truckee Railroad shop is the only one which is not completely modern. It has a very high ceiling and few windows so that the winter heating problem is difficult and unsatisfactory at best. The smoked walls and loft absorb what little light there is available in the fabricating department.

With 22,000 square feet of floor space, ample room is available for fabricating, assembling, painting, storing and shipping. Steel for fabrication is obtained from Kaiser and Columbia on the Coast.

The equipment for operating the plant consists of welding machines from Glen Roberts of Oakland and presses and lathes and tools as could be obtained during wartime. No new departure is followed in methods of manufacture, for assembly-line has been found to be most satisfactory.

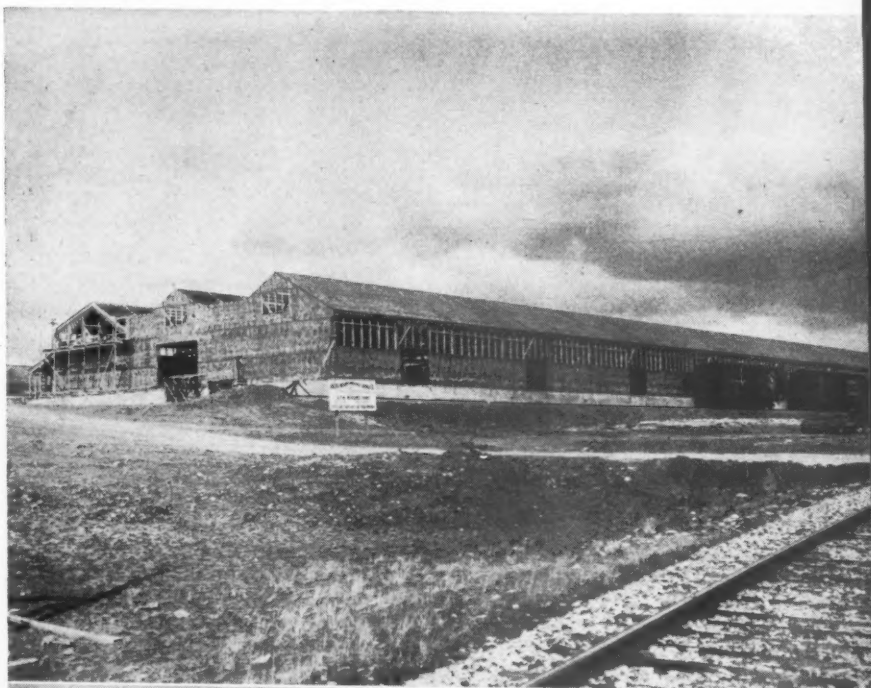
Likewise the Rocky Mount plant will use the assembly-line method from the unloading of the lumber, shop grade of California pine, seasoning, cutting, machining into finished parts, through treating to be water-repellent. When finished the parts will either be shipped to the East for assembly there for that market or assembled here for the Western market. Metal strips in which the sashes operate are manufactured in Detroit by R.O.W. Sales Co. F. D.

Vaughn, president of the company, states that only the most modern equipment will be used in the new \$500,000 plant, where an anticipated 30 million board feet of lumber will be cut each year.

The Steel Conversion Corp. plant will be the first one of its kind in the United States completely operated by electricity. Electric furnaces will reduce production costs as well as produce a finer product. Sufficient orders have been received to insure operation for at least a year.

All three organizations have anticipated the need for larger facilities. Both the Reno and Sparks plants have laid plans for additional plants when the need arises, and have adjoining land on which to build.

• Some 400 workers will be employed in this plant of Rocky Mount Manufacturing Co. at Reno, turning out removable windows, while the Steel Conversion Corporation plant at Sparks, bottom, will turn out tools for construction and industry in its modern plant.



Excessive Noise Can Hurt Both Workers and Output

Sound Hasn't Lost Its Punch Since Joshua's Horn Brought Down the Walls of Jericho; Maybe It's Tearing Down Your Profits Now

AFTER listening to the chatter of riveting guns in airplane factories, the cracking thump of drop presses, the high pitched whine of small generators on high speed tests, the scream of wire racing through dies, and a score of other manufacturing sounds, it is easy to believe that factory noise needs correction. To me and Professor S. W. Young of Colgate there is no doubt of it as a result of our recent study of noise as it affects workers in nearly forty industrial plants scattered about the country representing a fair cross section of American industry.

During and after our trip the principal questions we have been asked on this matter, and which we have attempted to answer are as follows:

1. Does factory noise impede production?

In the "average" factory where conversation can be carried on without excessive shouting, noise probably does not directly lower output. However, no completely satisfactory test on the point has been run in a factory. On the other hand, ill effects are experienced by employees and these ill effects may indirectly reduce production

By F. K. BERRIEN, Ph.D.
Assoc. Prof., Psychology
Colgate University

if the work area is highly reverberant and the noise level loud enough to make conversation difficult (about 200,000 loudness units). This raises the question:

2. How is noise measured?

Noise meters consisting of a microphone and appropriate amplifier circuits give readings in decibels — a difficult to understand logarithmic measure of acoustical power.

Loudness units are easier for the average person to understand. A doubling of LU's means a doubling of the sound in loudness, but a doubling of the decibels *may* mean the sound has increased in loudness about 17 times.

Complete silence is zero loudness units. Quiet conversation is approximately 250 to 500 LU's. The average commercial office rates about 2,000 to 3,000 LU's. Average street noises in a city run around 8,000 but "unquieted" subway trains gen-

MAINTENANCE is one of the most effective methods of insuring a profit. It is a balance wheel that keeps the plant operating smoothly, efficiently and economically, and saves the high cost of emergency repairs. The accompanying material is part of a series of editorial features dealing with maintenance in its varying forms and aspects.

erate as high as 225,000 LU's. The decibel readings from the meters can be converted to LU's by a simple table. Getting back to the effects of noise:

3. What are the ill effects of noise?

Workers daily exposed to noises of 200,000 LU's and more often report ringing in the ears, temporary deafness, headaches. New employees without previous factory experience have some difficulty in "getting used" to the noise. In some instances they quit before they get adjusted. At other times workers stay home in part because of excessive noise, but no reliable statistical study on either turnover or absenteeism as influenced by noise has yet been published.

The discomfort of workers seems to be more prominent in the presence of "impact" noise as contrasted with a steady roar or whine. Riveters working on airplane wings told me the buzzing continued in their ears long after arriving home from work. A chipper in a foundry using an air hammer declared the ringing in his ears never left him except for a few hours early Monday morning after a long weekend at home. "Then, blame it," he declared, "I've got to go back to that head-splitting noise again."

4. Does factory noise cause permanent deafness?

Management in a silverware plant noticed that the old timers on the drop hammers where knives, forks and spoons were pounded into shape gradually lost their hearing.

A locomotive repair shop used a huge tumbler for cleaning boiler tubes. A few

*** In a machine shop like this at Mare Island Navy Yard "where conversation can be carried on without excessive shouting, noise probably does not directly lower output."**



feet from this tumbler the noise was about 300,000 LU's. Hearing tests of high precision applied to the workers normally stationed in the vicinity showed that hearing loss was positively related to the length of employment and the average intensity of noise reaching the ears. Post-mortem examinations of animals after being subjected to noise slightly more than the intensity of the foundry mentioned above, revealed damage to the delicate tissues of the inner ear. Some factory noises are undoubtedly making people deaf.

5. Does noise cause accidents?

Possibly. In a drop hammer and power press room lost time accidents for one year averaged one per month prior to sound conditioning. Subsequent to reducing the reverberation and noise level by installing sound absorbing materials the accident rate dropped to approximately three per year.

A comparison of two departments of an airplane plant, both doing nearly identical work under very similar conditions showed that the sound conditioned department had almost one-half as many first aid calls per worker. In neither of these plants could the figures be taken at face value as indicative of the value of sound conditioning because other factors affecting accident rates were not fully controlled. Both cases involved impact noises which could logically lead one to suppose that such noises, if irregular, could produce startle responses that might produce accidents.

For instance, just as Harriet Blustack (on the wing assembly line) was reaching for a handful of rivets, Jane Holman let go unexpectedly with her riveting gun. Harriet jumped just enough to puncture her arm on the sharp corner of sheet metal standing beside the rivet box. The unexpectedness, especially of annoying noises, may contribute to accident causation.

6. What makes noise annoying?

This is a tough one. Remember the chills you had when the teacher used to run the chalk over the blackboard making a high pitched shriek? Exactly the same high pitched sounds produced in some other fashion and in other surroundings do not have the same skin-tingling effects. Generally speaking, however, noises that are very high or very low in pitch (not loudness) are more annoying than those in the middle range.

Unnecessary noises, or those we think are unnecessary, are annoying regardless of their pitch. The experienced factory man is not especially annoyed by the squeal of a driving belt being shifted from an idler to a driven pulley. Why? Because he knows it is a necessary noise. The girl from the office who occasionally runs out into the plant holds her hands over her ears when that occurs, but ignores the thumping of a worn bearing which drives



• But studies in airplane plants indicate that noises such as those of riveting can and do result in impact noises of sufficient intensity to adversely affect the accident rates.

the mechanic nearly frantic until it is corrected.

Another theory not yet completely verified is that noises whose source we can't easily locate are more disturbing than those which can be identified quickly. In a wire stranding room where steel cables were twisted together, the screech of an improperly running spool was soon mixed with the other machine noises bouncing off the ceiling and walls so that the spool in trouble could not be located quickly.

After the room had been treated with sound absorbing materials, the offending spool could be identified more quickly because the noise was not reflected off the hard surfaces, thus reducing, in effect, the sound "sources." The total reduction in

loudness was just barely detectable on the sound meter yet workers reported the noise was much less annoying.

7. What can be done to reduce factory noise?

First, reduce the noise reaching the ear. Many employees in noisy areas stuff cotton or waste in their ears. Because such crude measures are not especially sanitary, a great many types of ear plugs were developed and marketed during the war which promised to be a quick and relatively simple solution to the noise problem.

However, ear defenders are not readily accepted by some workers who complain that they are uncomfortable; some caused irritations leading to ear infections; others were merely ineffective. For many workers the plugs are just a nuisance—besides some people just dislike putting things in their ears.

Second, reduce the sources of noise. One plant which spent thousands of dollars on an acoustical installation to soak up the noise from power presses, continued to use a fleet of rickety metal frame trucks with steel tires that made more noise than the presses. For a fraction of the installation's cost the trucks could have been replaced with others of "quiet" design. A large part of the noise produced by a drop hammer was traced to the vibration of loose

Table to Convert Sound Meter Readings into Loudness Units

Decibel	LU.
110	215,000
100	88,000
90	38,000
80	17,100
70	7,950
60	4,350
50	2,200
40	980
30	360
20	100
10	10

flooring in the balcony used to service the overhead flywheel and shafting. Even a cursory survey will often reveal easily corrected sources of noise.

Third, reduce the spread of noise. Sound not only travels through air; it also travels through solids—walls, floors, beams. Machines set on spring blocks or on heavy foundations isolated from the rest of the flooring transmit less noise to surrounding structures. Low density acoustical materials properly installed on walls, ceilings or in curtain panels markedly reduce the reflection of sound waves and reverberation. Manufacturers of these materials have in the past concentrated on the auditorium, broadcasting studio and office installations but are developing special materials for factory sound conditioning.

8. What kinds of factory areas can be sound conditioned effectively?

Those in which hard sound-reflective surfaces are 15 or 20 feet from the principal noise sources and the noise sources are distributed with not less than 10 or 15 feet between them. Under these conditions normally the sound reaching the ear is a mixture of reflected and direct noise. Sound absorbing materials on the otherwise reflective surfaces reduce the reflected noise component thereby reducing the overall loudness.

With extremely high ceilings the reflected component of the noise is less, hence acoustical materials installed on such factory surfaces produce little change in overall loudness level. When the principal

noise sources are packed together closer than 10 feet, the direct noise component becomes increasingly great and sound absorbing materials become correspondingly less effective.

9. Does sound conditioning pay?

That depends on how the accounting system is set up; how serious is the noise problem; how easily it can be corrected; and how valuable management considers employee morale.

In situations meeting the requirements for effective treatment just outlined, employees almost universally report increased comfort, fewer headaches and less annoyance due to noise. In these terms sound conditioning pays.

Many Factors Join To Make A Weld That Will Be Enduring

Trained Crews at Mixermobile Manufacturers, Portland, Turn Out Seams and Joints Which Stay Welded Through Proper Use of Material

THERE are several important matters to be considered in the proper use of electric arc welding equipment and its relationship to proper binding of seams and joints. The performance of a machine welded industrial equipment depends a great deal upon the success of a company to entrust that phase of work to understanding operators of welding equipment.

Mixermobile Manufacturers, Portland, Ore., under the supervision of the plant superintendent, Eddy Wagner, the third of the three Wagner brothers who own the business (Gus and Harold are the other two), provides the following field case study of plant equipment and operation.

At the present time the plant, engaged in the manufacture of "Scoopmobile," a loading, lifting and materials handling piece of equipment, is housed in a building 100x125 feet which comprises a fabricating shop that includes a full assembly operation of welding equipment bodies.

One half of the building is used for welding operation of various sections of the bodies, while the production line is parallel to the welding section on the northeast side. Approximately 18 bodies can be placed in two lines, although recently the production of finished equipment has expanded and one of the lines has been adapted to the assembly of motors to the equipment which are mounted from an underneath position with the chassis lowered over the motor.

Almost 90 per cent of the seams and joints are welded on the chassis as they

are on the production line, using throughout the operations and manufacture nine arc welders.

Main stress joints and seams and adjoining seams are welded with E-6010 reverse welding electrodes of 5/32" rod on mild steel which is the primary steel used in the construction of all the fabricated parts composing the chassis.

Trained Crew Do Welding

Eddy Wagner has in the plant crew welding operators who have been following this type of work for a long period of time, several of whom were connected with war production training schools in Portland, Vancouver, and Oregon City. One of the operators, Joe Giersdorf, was associated with the Vancouver Vocational School as arc welding instructor for a period of 41 months. Associated with him is Clifford Betow, with 12 years' welding experience and seven months with the war production training program in Portland.

These operators agree that good sound welding is a study of welding metals, steel and proper use of electrical "push" or energy. Proper machine setting is about one of the first important requirements to understand. Proper coordination of machine and welder will make a properly welded seam or joint which will stand stress and strain that commercial material handling equipment will take.

They also agree that this does not necessarily mean a "must" item for this par-

ticular type of welding, although other jobs may be different and varied according to equipment design. Good welding, therefore, has this requirement, plus the fact that the length of the arc is a closely allied requirement in the understanding of good welding. Proper handling of the rod, the selectivity of the type of rod and length of arc will produce fine results.

Manufacturers of welding equipment do furnish excellent information, and generally a good welder will use the computations of setting, rod usage to arrive at a successful operating medium which takes into some consideration present atmospheric conditions, and type of steel and design of equipment to be completed.

These operators also feel that the traveling speed is another factor which is conducive to good or bad welding. Since steel is so flexible when it is hot, Joe Giersdorf has found that a moderate flow of steel on the arc will produce an even, well filled joint or seam.

By using a great deal of voltage or force on this job—with just enough to melt the electrode, the electrical force produces the fine even joint. In other words, the force pushes the metal into the weld seam to accommodate a stronger weld. To accomplish this, however, Giersdorf states that there must be a constant coordination between operator and the equipment he uses.

Incidentally, when this has been accomplished, it has meant a considerable amount of time saved by a unified operating system. It is therefore a practical applica-



• No matter what the particular welding job, operators of welding equipment must know how to use it to properly bind seams and joints. Here welder at Mixermobile Manufacturing Company, Portland, welds gear boxes while operator in rear welds head brackets.

tion to insist upon to make the weld seams clean, otherwise seams will result in producing pin holes which must be cleaned and the job done over to fill the gaps.

Downpass or downhand welding at this plant on almost all parts of chassis are completed by using E-6013 on mild steel of thickness from $\frac{3}{8}$ -inch to $\frac{1}{2}$ -inch. The trolley supports are manufactured of $\frac{3}{8}$ -inch to $\frac{1}{2}$ -inch angle iron with a front weld of about 30 inches. The front steel comprising the cowl is $\frac{1}{4}$ -inch steel and welded to $\frac{3}{8}$ -inch angle iron and 12 feet high.

Placing of trolley supports to cowl is done by a jig and welding is started by placing a 2-inch tack, using E-6010 $\frac{5}{32}$ -inch reverse rods.

To weld inside of gear box covers, the operators are using $\frac{5}{32}$ -inch, E-6013 rod on overhead. In this section of the operation are also included gas tanks, steering spindles. The latter are welded with

$\frac{5}{32}$ -inch E-6012 rods also.

To the rear of the welding section is a department composed of about four welders primarily working on overhead bars for material handling equipment, which are overhead supporting arms to hold trolley bars. In this operation the welders are using E-6012, an old stand-by welding rod which is still a favorite. For tacking mild steel together for shaping fabricated steel, $\frac{3}{16}$ -inch rod is used. On heavy groove welding the operators switch to a $\frac{1}{4}$ -inch rod.

In this area the balance of the welders are assembling scoops and buckets, head brackets and scoop backs. Scoops are tacked together with a 2-inch weld — an operation which requires about forty-five minutes, before final weld and tacking on of the trolley angle bars. Most of welding is done on the downpass in this section.

When the chassis have been completed as for welding and are still employed on

the production line a thorough job of sanding all the weld seams and joints finishes off the production of the chassis. From this section the bodies are transferred to another building nearby for the spray painting job.

This department is confined to a section in the building which is devoted entirely to the cutting of template material. This plate shop is 60x100-feet and is furnished with an Oxy burning machine with a 15-foot bed, equipped with two cutting barrels. This machine has been rebuilt in some parts to handle the special template requirements of the manufacture of their product — namely the construction of a new 15-foot reach and equipped to handle material of mild steel from $\frac{3}{16}$ -inch to 4 inches in thickness.

Also equipped in this department are two radial drills, an iron worker, power saw with an 18-inch blade and a 36-inch blade shears.

Pallet Pool Is Organized; Starts Operations In Sixty Days

FIRST reports of a pallet pool (see *Western Industry*, March '46, pages 40-41) appear to be confirmed with the formation of the Lawrence Pallet Exchange.

The exchange is to start operations within the next 60 days and with offices in 25 major cities of the United States.

This operational advantage of such an initial number of offices is gained from the close affiliation of the exchange with the Lawrence Warehouse Company. Both organizations are subsidiaries of the Lawrence Holding Corporation, owned by what is described as "a group of West Coast people interested in canneries, frozen foods, sawmills, insurance," as well as warehousing.

Announcement of the formation of the pallet exchange was made by David Pursley, official of the organization, at the May meeting of the Materials Handling Association held in San Francisco. Pursley also disclosed formation of the Lawrence Universal Pallet Corporation, another subsidiary of the Lawrence Holding Corporation.

Purpose of the corporation will be four-fold:

- 1) Provide a materials handling engineering service to develop universal pallet handling and shipping of palletized goods.
- 2) Maintain a materials handling research laboratory.
- 3) Organize into a mutual association both industrial and commercial concerns that are interested in shipping and receiving material in palletized form.
- 4) Provide a pallet exchange service.

How the pallet exchange will operate is as follows: Each firm will pay a \$100 fee for membership, to serve to cover its share of costs of inventory, auditing, and the support of the laboratory for the year.

The member firm will agree to use the pallets of the exchange. It will be able to lease these pallets, but will not be able to buy them.

If requirements of the firm for pallets amount to say, 5,000 units, the firm will agree to pay for them as follows: for the first shipment of 600 (that is the amount that can be shipped in a freight car) it will pay \$5 per pallet plus freight charges above 15 cents per pallet. On each subsequent carload of 600 it will pay \$3 per pallet, but freight charges will be paid by the exchange. In addition to these charges the firm will agree to pay 5 cents per month per pallet for the balance of the initial year as rental, which can be commuted to \$0 cents per annum.

At the same time a firm signs up, it will give the pallet exchange a list of its customers and suppliers. Each of these organizations will, in turn, be contacted by representatives of the pallet exchange. As rapidly as they agree to use palletized shipments the firm will start making the tremendous savings inherent in loading and unloading by the fork truck-pallet handling system.

Each member firm will supply the exchange weekly with a summary of the pallets it has received and shipped. For each of the pallets received it will pay the exchange a service charge of 15 cents.

Through the exchange's bookkeeping system it will be easy to keep the member firms supplied with pallets continually. In the hypothetical case of the firm using 5,000 pallets, mentioned above, the exchange will ship it a carload of empties each time its inventory shows a drop below 4,400 on hand. Thus it is hoped the member firm will ultimately have a 30 day supply always available.

Among the many advantages that appear to accrue to members of the exchange that of using the exchange's standardized pallet seems to be outstanding.

The standardized pallet, perfected by the Lawrence Warehouse Company's research staff, weighs only 50 pounds and is of the four-way entry variety. It is constructed of selected, kiln-dried Douglas fir, and is held together by special glue laminated and bolted construction. Though its cost will be initially more than double that of the type of pallets now generally in use, its durability is such that it will have a life several times as long.

Because of its being held together in part by bolting, it is capable of easy disassembly, thus permitting shipments of them to be knocked down and nested in order to save shipping space.

One of the most important of its advantages is that it can be used for plant operations as well as for cross-country shipments. The pallet's dimensions are 40 in. by 48 in. In designing it, engineers paid special attention to the width of doors and the inside widths of refrigerator cars and plants. Unlike the designers of most pallets, they did not attempt to make a pallet for a given commodity, choosing rather to make a pallet that could be used by the widest variety of existing transportation equipment and under the widest variety of conditions.

Present general pallet design may safely be described as anarchic. Designers have been in most cases amateurs. Pallets have usually been constructed to fulfill the needs of a given plant for handling of a given commodity. Virtually no heed has been given, in the pallet's construction, to the possibility that it might be used for the shipment of some other commodity. Such a possibility did not exist. Accordingly, the pallets in use are of multiple shapes, sizes and construction, and very often a pallet that is quite suitable for handling a certain class of goods from one plant to a certain destination is not suitable, and cannot be used, even for shipments of material for plant purposes.

Other characteristics of the standardized pallet, which contains some patented features, are: rounded corners; a tongue and groove device to prevent racking; chamfered bottom boards to permit hand pallet trucks to enter easily, and gliders on the bottom. The tongue and groove device, the method of laminating the pallet in construction and the special bolt used, have been patented.

Less obvious advantages accruing to pallet exchange members will include the following: each member will receive full information on all pallet and other materials handling developments as rapidly as they can be made available through the efforts of the Lawrence Universal Pallet Corporation and its research laboratory.

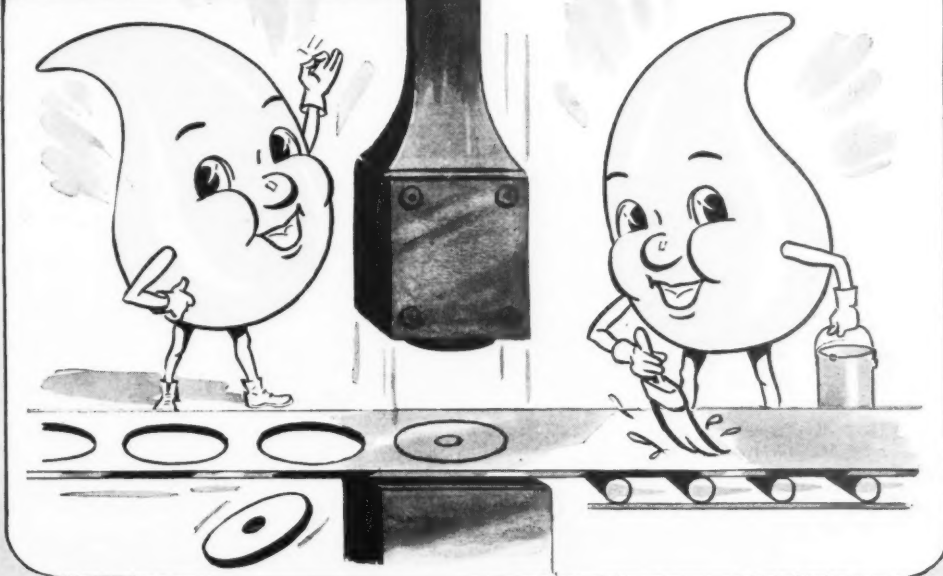
Through membership in a mutual association, which will be formed from all members of the pallet exchange, the entire group will be able to exert its influence to obtain "weight allowances for pallets in rail shipments and lower rates on truck and water shipments of palletized material."

Mention of water shipments indicates that the range for palletized shipments will not be limited to the United States.

Currently railroad companies charge the same rate for the pallets as they do for the commodities carried on them. While the railroads contended that this should continue to be the case, shippers urge that a lower rate should be charged for palletized material since it enables unloading to be greatly speeded, thus giving a measure of benefit to the railroad. The lower rate, they feel, should take the form of an allowance of some kind for the weight of the pallet.



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SOLUTION: When the Shell Lubrication Engineer surveyed the problem he recommended a Shell Garia Oil. This was applied

with a paint brush to the top of the strip, just ahead of the stamping. All burring and overheating ceased. Manufacturer completed 60,000 valve parts, at the rate scheduled, without renewing dies.

CONCLUSION: It pays to consult the Shell Lubrication Engineer, regardless of the nature or size of your lubricating problem. Write for informative literature on Shell Metal-Working Oils. Shell Oil Company, Incorporated, 50 W. 50th St., New York 20, N. Y. or 100 Bush St., San Francisco 6, Cal.

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U. S. Steel Bid Seen As Winner For Geneva

WASHINGTON, D. C. — The Geneva bids that are regarded seriously here are those submitted by the U. S. Steel Corporation, and by the Colorado Fuel & Iron Company.

U. S. Steel bid \$66,600,000, with the important condition that it would move to make Geneva, Utah, the basing point for the steel produced in the West. There are



people in the Capital who consider the basing point factor equally important with the operation of the Geneva steel plant.

The Colorado Fuel & Iron bid involves an initial commitment of \$25,000,000, plus an additional expenditure of \$35,000,000 to \$40,000,000, and the equation of \$2.00 per pound on steel produced.

This correspondent is convinced the U. S. Steel proposal will be accepted. The initial payment would be \$5,000,000, and \$6,000,000 expenditure within two years, followed by \$35,000,000 additional expenditure in the immediately succeeding years.

Determining Factor

Apparently the determining factor will be the basing point proposal, plus the fact that the U. S. Steel has the background of experience, resources, technological facilities, and all the other essentials regarded as necessary for competent and quick operation. There is conviction in the Capital that U. S. Steel will keep the plant running, and that the integrated operation with its other units will be advantageous for the West.

The substantial elements in Congress appear to be sold on the acquisition by U. S. Steel. The Reconstruction Finance Corporation has no official connection with the mechanics of the sale; but the RFC owns the plants, is the declaring agency which has placed Geneva in the hands of War Assets Administration, and, obviously, will be consulted in the analysis of the various bids.

It is the general assumption in the Capital that RFC has always been sympathetic to the broad principles typified by the U. S. Steel, and that U. S. Steel has much legitimate influence in RFC. The gentlemen with banking backgrounds who make the policies of RFC obviously will be definitely inclined to favor the bidder with the best financial and industrial record.

The two bids mentioned were those considered specific and free of the ambiguities

By ARNOLD KRUCKMAN

supposed to be involved in the other four. These four are regarded as hedged with such intricate conditions that comparisons will be difficult, and the study and analyses must be made with great care. Some are leasing proposals, as you know.

Kaiser's bid, of course, is regarded solely as an effort to bring to public discussion the effort to secure a scaling down of the conditions imposed by RFC in the Fontana transaction. There is much discussion here about the future of the Kaiser enterprises, and there is much hopefulness that the enterprises may survive the present pressures which affect all business.

The word is that the Kaiser kingdom—both alliteration and reiteration—has strained relations with the U. S. Steel empire. The situation is reported to have sprung from the settlement of the Kaiser strike troubles in the East.

Apparently, the settlement was independent and misunderstood. U. S. Steel presumably had the impression that no strike settlements would be made unless all interested elements made settlements on a common basis. There appears little immediate indication that RFC will act upon the Kaiser suggestions.

Decision Soon

There seems no reason to assume that it will require much time to formulate a decision on the Geneva transaction. The U. S. Steel bid involves acceptance not later than June 15. It is generally supposed it will not take 30 days to clear the matter in the War Assets Administration.

One of the best-informed writers at the Nation's Capital, Arnold Kruckman, presents each month authoritative comments on political developments and their practical application to industry of the West. Any reader who wishes additional information may write to him directly, using business letterhead, at 1120 Vermont Avenue, N.W., Washington, D.C. Inquiries will be answered free of charge. You also are invited to contact him personally in Washington. Copies of pending congressional bills may also be obtained free of charge.

From War Assets the deal goes to the Attorney General for approval. Clark is opposed to cartels and other forms of trade restraining combinations. Opinion in the Capital is that the status of the U. S. Steel Corporation has been clearly defined by several U. S. Supreme Court decisions, and that the Attorney General will promptly give an affirmative judgment.

The matter is then clear for the contracts, and Capital opinion appears to be that Geneva should soon be in operation, employing at least 5,000 persons. Obviously, Congressman J. W. Robinson of Provo, Utah, head of the House Roads Committee, one of the most solid members of the Western delegation, is very happy about the prospect.

Westerners on the Move

Harold Wright, general manager of the Los Angeles Chamber of Commerce, the new president of the Western States Council, came to the Capital in the interests of the Western States Council Steel Committee. His visit was brief, and rather inconspicuous.

Floyd O. Hagie, who came here nine years ago from the Wenatchee Valley Chamber of Commerce, to stay three months to put the National Reclamation Association into operation, returns permanently to the Pacific Northwest on June 1, to take over the duties of executive vice president of the Seattle Chamber of Commerce. He succeeds Christy Thomas, who, as a vice president of the Seattle chamber, came to the Capital early in May to take over the job in the Washington office of the Chamber, which for a number of years had been outstandingly filled by Jack Underwood.

Jack, known far and wide on the Pacific slope, has retired. As newspaper correspondent and representative of the Seattle Chamber of Commerce, he has made the Capital his headquarters for over a quarter century. Jack is an amazingly alert and interesting man. He continues to live in the Capital.

Hagie, forceful, typical of the Northwest, sound, realistic, unemotional, deliberate, and endowed with unusual breadth of vision and intelligence, is for the Seattle job the phenomenon the showman calls a "natural." By that the showman means the rare instance of the exact implement for a precise purpose.

He goes back West a genuinely powerful influence in the affairs of the Capital where they touch the West Slope in irrigation, power, and allied concerns. He has had considerable effect upon national problems of water and power, and has been a source of strength and leadership to members of Congress in all sections of the country.

It is unknown who will succeed Hagie, but it is generally the gossip that John Henry Shaw, some time Assistant Attorney General of California, will step into the



Adequate dock space is provided for 5 Trailers in this design.

BUILDING DESIGN INCLUDES *Trailer Facilities*

Note how Trailer-level docks simplify loading and speed the movement of goods. Only the Trailers need be left standing for loading or unloading.

Marcus P. Miller, Architect, who designed this modern West Coast plant, built Trailer-loading facilities right into the building.

When the U. S. Hardware and Paper Company, Los Angeles, California, located at the intersection of 2 busy streets, they faced the problem of smoothing the flow of merchandise both *in* and *out* of the plant.

A two-way operation had to be considered. Goods must move to and from the building by Trailers. Traffic could not be blocked on the narrow streets. Waiting for position to load or unload would increase costs. So, the architects "piped" transportation into the building at the vital spot—by this simple method.

The enclosed, off-the-street docks, shown in the photo, provide ample space for loading, unloading and garaging the company's 5 Fruehauf Automatic-Coupling Trailers. And, by using the Trailer "shuttle method"—where only the vans are left standing for loading while trucks couple to loaded units to make deliveries—

only 5 units are required to serve customers within a radius of 50 miles.

Transportation now flows smoothly. This fleet of Fruehaufs moves 75 tons per day to keep factories and businesses in this Southern California area well stocked.

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"Engineered Transportation"



FRUEHAUF TRAILERS

place. Shaw was here for some months as assistant to Hagie.

Hagie and Thomas were the central figures on the receiving line in the annual party which the Seattle Chamber of Commerce gives in the Capital. There were approximately thirty persons in the line, a formidable gauntlet for some guests.

The party was held at the Statler Hotel, the scene of most of Washington's notable functions. Labor Secretary Lew Schwollenbach and Associate Supreme Court Justice Douglas came early and remained to the end. The guests, some 600 to 700, were representative of all groups from Washington and the Northwest as well as from other parts of the Pacific Slope. There were present distinguished people from all parts of the country.

It was in every sense one of the most successful and really brilliant parties of the kind ever held in the Capital. The buffet dinner was built up of a variety of foods flown from the Northwest. There was salmon, and giant asparagus, tomatoes, and numerous other items, arranged for service in colorful contrast.

The parade of the platters, on huge wooden bases of Northwestern lumber, itself was a bit of drama. The chef who organized it probably was also flown from the Northwest, and was introduced and vociferously applauded. There are few parties in the Capital to which invitations are sought as eagerly as these annual gath-

erings of the Seattle Chamber of Commerce. They leave their impression in a town which has so many parties that you have to find a skillful way of fending them off.

Seattle may be proud of those who organize this notable hospitality. It more than puts Seattle on the Capital map.

"Bill" Herron, originally of Alaska, later of Seattle and the University of Washington, and sometimes of Los Angeles and its Chamber of Commerce, has just returned from a swift trip to the West, and was sought at the party by many who felicitated him upon his success in finally bringing to fruition his long-cherished idea of a committee in Congress to function purely in the interest of the affairs of business, industry and commerce, domestic as well as foreign.

Government Anomaly

It has been one of those anomalies of our Government that the House Committee of Interstate and Foreign Commerce, headed by Congressman Clarence F. Lea, of California, has had almost nothing to do with foreign commerce, and only limited connection with commerce that is far afield from problems of transportation and interstate relations.

Congressman Lea, Nestor of the Congressional delegation from the Pacific Slope, and one of the most distinguished and beloved members, readily fell in with



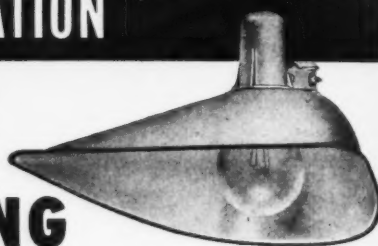
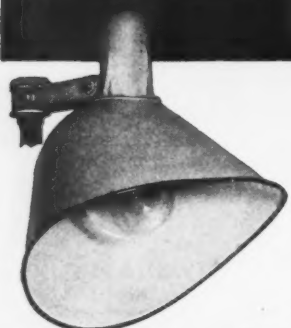
the idea that the functions of the committee must be more directly applied to the problems which were hammered insistently at Congress by Bill Herron.

As the result of this circumstance, the Department of Commerce, hitherto rather free to act without specific committee supervision by Congress, now, like the Department of Agriculture, and other departments, comes under the direct scrutiny of a sponsoring committee.

New Subcommittee

In the House Committee of Interstate and Foreign Commerce, Chairman Lea has established a subcommittee which is headed by J. Percy Priest, the member from Tennessee. This committee has begun its hearings and is now especially interested in what the Department of Commerce is doing about Smaller Business and Foreign Commerce. It is a strange fact that there has been little attention hitherto to Foreign Commerce, export or import, except such as came incidentally from the State Department, the Treasury, and the Commerce Department.

The post-war situation obviously has made foreign commerce of prime importance. The new Congressional group is making very detailed study of the problems, and apparently proposes to define some policies which will be given to Henry Wallace and the Department of Commerce as the chart for the work of the new Office of International Trade operations.



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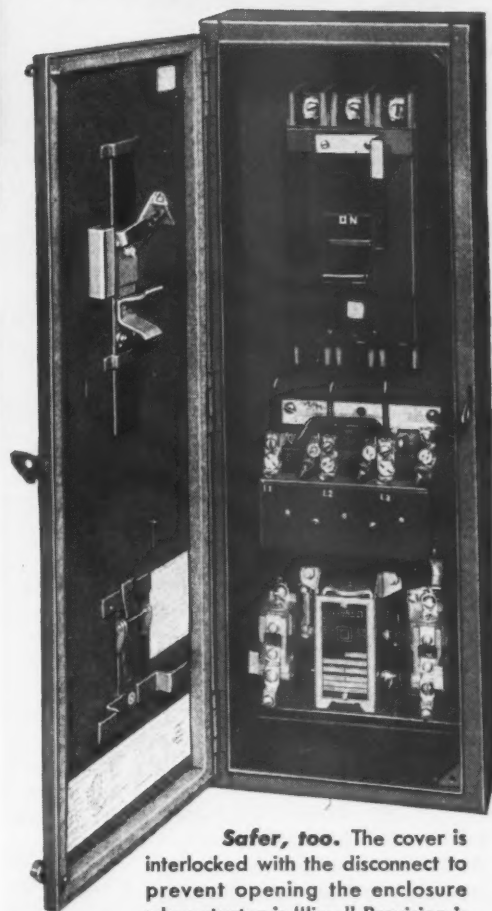


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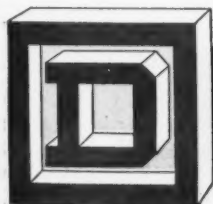
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Safer, too. The cover is interlocked with the disconnect to prevent opening the enclosure when starter is "live." Provision is also made for padlocking the disconnect in the "OFF" position.



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DETROIT

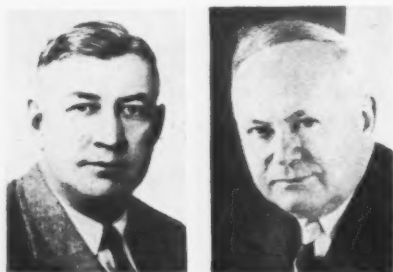
MILWAUKEE

LOS ANGELES

WESTERNERS AT WORK...

Arizona

When P. G. Beckett, v.p. and director of Phelps Dodge Corp., Douglas, decided to retire from active service in the corporation, Harrison M. Lavender, v.p. and gen. mgr., took on his duties and assumed direction of all western operations. . . .



• Adding new jobs to their present duties are Harrison M. Lavender (left) who is now in charge of all western operations at Phelps Dodge, Douglas, and Harry A. Mitchell elected v.p. and gen. mgr. of Western Pacific.

One job for two—Alfred F. Hallett, formerly chief chemist with Inspiration Consolidated Copper Company, Inspiration, Ariz., and metallurgist with Emerald Isle Copper Company, Kingman, joins Tennessee Schuylkill Corp. at Chloride in similar capacity. . . .

California

Ross Miller named mgr. of Gar Wood Industries, Inc.'s, Pacific Coast factory in San Francisco. . . . William L. Maas, secretary of Pacific Sound Equipment Company, Los Angeles, has taken on a new secretaryship—that of the New Council of American Business, Inc.; George C. Hatch, gen. mgr. of Intermountain Radio Network, Ogden, Utah, is pres. of the outfit which is opposing the NAM. . . .

Col. Edward W. Mason decided 53 years of railroad service were enough so is retiring from Western Pacific on July 1, although he retains his post as v.p. and director until Dec. 31. Succeeding him as v. p. and gen. mgr. will be Harry A. Mitchell, now pres. of Sacramento Northern, the Tidewater Southern and Oakland Terminal Railways.

Old-timer—L. D. Osborne, for the past 20 yrs. supt. of Pacific Coast Borax Company plant at Boron, transfers to company headquarters at 510 W. Sixth Street, L.A. Succeeding him is Claude Grimm. . . .

Changes jobs—H. T. Lintott, former mgr. of industrial relations for Columbia Steel Co., San Francisco, joins Pacific States Steel Corp. as manager of operations at Niles. . . . Dr. Monroe E. Spaght, mgr. of Shell Oil Co.'s manufacturing depart-

ment in San Francisco, named v.p. of Shell Development Co. with headquarters in New York. . . .

Western inroad—American Society of Tool Engineers elected A. J. Denis, president, Murphy-Denis Corp., Los Angeles, as only Westerner on its board of directors. Denis takes office in October. . . .

In waterfront circles, Raymond J. Pries, civilian chief of traffic dept. of the water division, is named acting traffic mgr. for West Coast regional office, WSA., while Charles S. MacIntyre, deputy director of water division, holding rank of Colonel during the war, returns to civilian life as executive of American-Hawaiian Shipping Company. . . .

Honored—Oil Producers Agency of California elected W. C. Whaley, v.p. of Barnsdall Oil Co., its new prexy, succeeding C. P. Watson, v.p. of Seaboard Oil Co. . . .



• A. H. Calderwood (left) moves up from manager-ship of Shell's Wilmington refinery to mgr. of manufacturing dept. in company's San Francisco head office; while George D. Keller joins Bobbi Motor Car Corp., new San Diego lightweight auto producer, as exec. v.p. Other company officers are Pres. S. A. Williams; v.p. in charge of engineering, J. S. Liefeld; v.p. in charge of sales, J. D. Carter; v.p. and sec., Maurice L. Howard; treas., Ned E. Randall; chief engineer, J. V. Bretau.

Aircraft changes—Major Reuben H. Fleet has resigned as consultant to Consolidated Vultee Aircraft Corp., San Diego, while over at Ryan Aeronautical, C. A. Stillwagen was upped to Controller position, which he will add on to other duties he has as corporate secretary.

Often called the "boy wonder" of Vultee, Charles W. Perelle, formerly v.p. in charge of manufacturing for Consolidated, was elected pres. of Gar Wood Industries, Inc., when Glen A. Bassett retired. Perelle left Hughes Aircraft Corp. to go with the Gar Wood concern.

Robert E. Dorton, asst. v.p. of Bank of America, will head the concern's International Banking Dept. in Los Angeles, succeeding G. Riedlin. Dorton has long been interested in foreign trade.

Good fortune for the West—Sam H. Husbands, director of RFC, director of Seaboard Airline Railway and Anglo California National Bank, joins Transamerica Corp. as executive vice president, assuming duties June 1.

Did you know that—Joseph H. Travers was upped to manager from asst. mgr. of the Accident Prevention Bureau of Waterfront Employers' Assn. of the Pacific Coast, to fill the vacancy caused by Mr. Pickard's death. . . . That William E. Dillon, who served as a major in the Army Air Corps, has ret'd. to his post as geologist in the geological dept. of Tide Water Assoc. Oil Company. . . . That H. R. Lake was picked to head Santa Fe Skyways—new air cargo affiliate of Santa Fe Railway. The new pres. was former gen. supt. of railroad transportation.—He takes to the air!

Edmund A. Foley leaves War Assets employ to become district mgr. at Fresno for Rosenberg Bros. & Co. San Francisco, dried fruit packers.

Colorado

Private industry beckoned—Walter W. Bentley, western supervisor of explosives control division, U. S. Bureau of Mines, joins Colorado dept. of American Smelting and Refining Company, Denver, as resident engineer, succeeding Harvey L. Tedrow who resigns to take post as gen. mgr. of El Paso Mines, Inc.

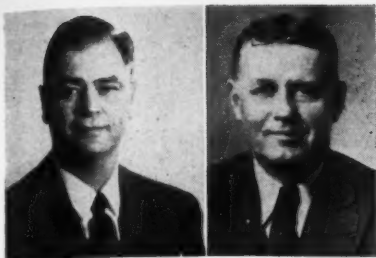
Clifford D. Carter, formerly in the Veterans Administration regional office at Cheyenne, moves to Denver as chief of the training facilities division, with Karl Snow, Denver, as his assistant. Harold J. Cole comes to Denver from Milwaukee as assistant director. . . .



• Experimental engineering and manufacturing will capture the attention of Fred P. Laudan (left), Boeing Aircraft Company v.p., while G. T. Bovee becomes controller of Consolidated Vultee Aircraft at San Diego.

Idaho

New Supers—D. G. Hendrickson appointed supt. of operations, and James L. Hemingway, supt. of communications for Empire Air Lines, Boise. Both men come from Pacific Northwest Air Lines.



• Kaiser men in new posts are D. A. "Dusty" Rhoades, v.p. and gen. mgr. of Permanente Metals Corp., who will direct destiny of the Kaiser aluminum plants, two of which are at Spokane, and Francis M. Rich (right) who comes from The Steel Company of Canada, Ltd., to job of v.p. in charge of operations at Kaiser's plant at Fontana. He succeeds the late Peer D. Nielsen.

Montana

G. M. DeJarnette of Missoula is new chairman of Northern Rocky Mountain section of Society of American Foresters, succeeding Clarence B. Sutliff of Thompson Falls. Other new officers are Ralph E. Field, Missoula, vice chairman; Billy M. Watters, Missoula, sec.-treas., and E. A. Elliot, Yellowstone Park, Wyo., field exec. and board member. . . .

Nevada

Change of scene — Mining geologist Sherman A. White leaves Oasis where he was supt. of Sierra Talc Company division to take post as mining geologist for Johns-Mansville Products Corp. at Lompoc, in mining and processing of diatomaceous earth operations. . . .

Going up—Robert H. Raring, mgr. of Copper Canyon Mining Company at Battle Mountain, recently elected v.p. of company. . . . J. Ray Coulter, Henderson, formerly production supt. of Basic Magnesium, Inc., will head operation of U. S. Vanadium's new tungsten processing unit at Henderson when it gets into production.

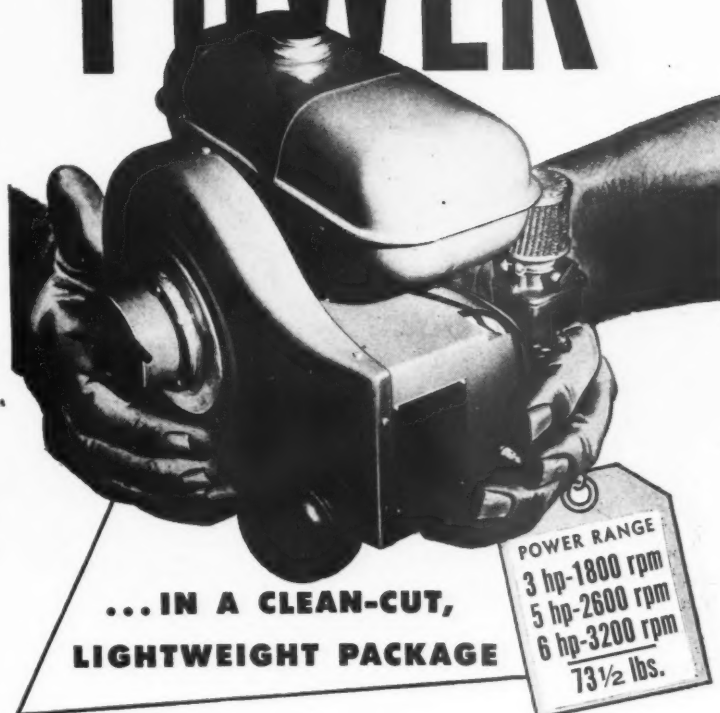
Ray E. Killingbeck, Tacoma, succeeds E. George Howe, Winnemucca, as pres. of Molybdenum Products Company, operators of Blue Bucket mercury mine in the Bottle Creek area, and other new officials, all of Tacoma, are Albert Grau, v.p.; Thomas Lowry, sec.-treas.; M. W. Peterman and Al Mitchell, directors. . . .

Theodore "Ted" D. Overton has accepted post as mining engineer for the state Bureau of Mines at Reno, doing a little professing on the side at the University of Nevada. "Ted" for the past year has been managing editor of *Western Construction News*, San Francisco.

New Super—F. E. Lewis, mine supt. for Horse Heaven Mines, Inc., Oregon, takes over duties of supt. at the Cordero cinnabar mine near McDermitt in Northern Humboldt county when D. Ford McCormick retires "to spend the future fishing" at Eagle Point, Ore.

(Cont. on Page 54)

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LIGHTWEIGHT PACKAGE

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3 hp-1800 rpm
5 hp-2600 rpm
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73½ lbs.

The Gladden model AB-3 engine delivers power-packed performance. Lightweight, embodying many construction principles adapted from aircraft engines, its horsepower range is from 3 to 6. Flat torque curve illustrates its ability to lug under all conditions.

DEALERS!—The Gladden engine offers a powerful 4-WAY sales punch.

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2. Now in volume production, the model AB-3 can be delivered sooner than you expect. Other Gladden engines from 2½ to 15 horsepower are scheduled for production.
3. Gladden engines are backed up with strong merchandising and advertising support.
4. Gladden Products Corp., has a strong, fair sales policy designed to cooperate with all elements of distribution.

Get full details of Gladden's 4-WAY sales plan. Write on company letterhead.



GLADDEN PRODUCTS CORP.

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WESTERNERS AT WORK...

Oregon

Members of the Willamette Valley Lumbermen's Association elected **Guy Haynes**, L. H. L. Lumber Co., Carlton, as its new pres., succeeding **C. Ward Ingham**. **T. V. Larsen** of Austa Lumber Co., Noti, was elected v.p.

Frank J. Ashe, commissioner of conciliation at Denver for seven years, appointed as regional service co-ordinator in Oregon, Washington, California, Nevada, Idaho, Montana, Wyoming, Utah, Colorado, Arizona and New Mexico. . . .

Portland loses—**Fred E. Lord**, director of procurement for the Kaiser shipyards of Portland and Vancouver, has been named director of purchases for the Kaiser-Frazier corporation and Graham-Paige Motors, at Detroit. . . .

Utah

Heads Bureau—Appointment of **Ralph E. Gettys**, formerly of Fresno, as inspector in charge of U. S. Dept. of Labor's wage-hour and public contracts division in Utah is revealed. He succeeds **Alton Hartle** who enters private business. . . .

Henry R. Parsons, exec. director, Wyoming Taxpayers' Assn., has been appointed director of research for Utah Foundation.

Washington

Brothers team up—**F. T. "Ted" Isaacson** has teamed up with his brother, **Paul Isaacson**, pres. of the Young Iron Works, Seattle, and has assumed position of secretary and gen. sales mgr. for the outfit. . . .

Algerish—A man who started in plywood as a factory hand 15 years ago has been just named general manager of Washington Veneer Co., Olympia—**Hal W. McClary**. He took over **E. E. Westman's** position when he retired. Could

be the aim he demonstrated when he was basketball star for the University of Washington, back in '29 and '30, is still good!

W. R. Thigpen, former district traffic mgr. of United Air Lines at Portland, has been jumped to special asst. to president of United, with headquarters in Seattle. He's been assigned to public relations contacts in his new job. . . .

Comes of age—When WAC became independent of RFC **James G. Wilcox** was appointed WAC regional director in Spokane. . . .



● Shifts in personnel at Douglas Aircraft result in **A. C. Wallen** (left), plant mgr. at Long Beach, going to Santa Monica as prod. mgr. while **Fred W. Herman**, chief engineer, succeeds him as mgr. of Long Beach plant.

Expeditor—**Waino R. Lauri** is Seattle's new housing expeditor—his job will be to determine housing and material needs and help builders over the rough spots. . . .

\$150,000,000—That's the amount of stock **Capt. W. F. Prien**, S.C., U.S.N., has charge of at the U. S. Naval depot at Velox. **Prien** was transferred to Spokane from the naval depot at Clearfield, Utah. All the goods have to be inventoried for surplus and restored for naval use. . . .

Woman at work—**Miss Anna Truedson**, formerly Boeing assistant women's supervisor, has been appointed women's supervisor, handling problems of women workers at the Boeing plant. . . .



● Some 50 members of the Douglas Fir Plywood Assn. recently paid honors to **E. E. Westman** (second from left) now retiring from presidency of Washington Veneer Co. of Olympia, Wash. **E. W. Daniels**, at right of Westman, pres. of Harbor Plywood Corp. of Hoquiam, presents him with luggage for the trips he can now take. Looking on are **Thomas B. Malarkey** (extreme left), v.p. of M. & M. Woodworking Co., pres. of assn.; and ex-basketball star **Hal W. McClary**, new gen. mgr. of Washington Veneer Company, who now steps into Mr. Westman's post.



● Names in the News: **Harold C. Wright** (left), gen. mgr. L.A. C of C becomes pres. of Western States Council; **James L. Fee** (center) becomes mgr. industrial relations for all Bethlehem's Pacific operations, with hdqtrs. in San Francisco; and **F. A. Hubbert**, pres. of four Sleepmaster factories is directing production at the new plant of Tacoma Sleepmaster Co., hdqtrs. Seattle.

From Washington to Seattle—**Floyd O. Hagie**, sec.-mgr. of National Reclamation Assn., is new manager of Seattle Chamber of Commerce, filling post of **Christy Thomas** who will represent the Chamber in Washington. . . .

Wyoming

Glenn E. Nielson, Cody, is pres. of Husky Refining Co., independent Wyoming petroleum refining concern. The Smiths have it—**Charles M. Smith**, Thermopolis, elected pres. of Wyoming Engineering Society at annual convention, succeeding **George T. Cunningham**, Cheyenne; **J. G. Smith**, Cheyenne, succeeds to v.p. when Charles took over presidency.

Associations Elect

New officers of Northern California chapter, American Institute of Chemical Engineers are: **A. George Stern**, Westvaco Chlorine Products Co., Newark, chairman, succeeding **C. R. Nelson**, Shell Development Co.; **John R. Callahan**, Chemical & Metallurgical Engineering, San Francisco, vice-chairman; **Jose A. Samaniego**, Shell Development Co., San Francisco, sec.-treas. Executive committee members: **J. H. Arnold**, California Research Corp., Richmond; **P. M. Huemmer**, Union Oil Co., Oleum; **B. W. Van Arsdell**, Western Regional Research laboratory, U.S. Dept. of Agriculture, Albany.

A. D. Schwaner, v.p. of F. M. Ball & Co., Inc., Oakland, elected pres. of California Processors and Growers, Inc., succeeding **Emil Rutz**, pres. of Schuckl & Co., Inc., Sunnyvale, who served two years. **A. W. Eames**, pres. of California Packing Corp., re-elected v.p. of the organization.

A. W. Skuderna, American Crystal Sugar Co., Denver, elected pres. of Beet Sugar Development Foundation, at its recent Salt Lake meeting. Other officers are: **A. E. Benning**, Amalgamated Sugar Company, Ogden, v.p.; **B. P. Smith**, Fort Collins, Colo., sec.; **J. A. Summerton**, Denver, asst. sec., and **Byron Albert**, Fort Collins, treas.

New officers of Export Managers Association of San Francisco are: **R. E. Waterlow**, pres.; **L. A. Elsener**, Chicago Bridge & Iron Co., v.p.; **Luis Yribarren**, Crown Willamette Paper Co., sec., and **David**

Mari, Fibreboard Products, Inc., treas. Waterlow recently joined staff of Frazar & Hansen, importers and exporters.

Kenneth L. Vore, traffic mgr. for Consolidated Vultee Aircraft Corp., Vultee Field, Calif., elected gen. chairman of Western Region Traffic Committee of Aircraft Industries Assn. of America, at Los Angeles meeting. He succeeds **C. E. Umphress**, traffic mgr. for North American Aviation, Inc., Inglewood. Other officers: **A. P. Graham**, traffic mgr. for Boeing Aircraft Co., Seattle, vice chairman; **L. J. Rowley**, asst. to gen. traffic mgr., Douglas Aircraft Co., Inc., Santa Monica, chairman of Rate and Classification subcommittee, succeeding **Paul A. Palmer**; **William Shulver, Jr.**, remains chairman of Packaging-Loading subcommittee.

Officers of Nevada Mine Operators' Association re-elected are: **J. C. Kinnear**, v.p. of Kennecott Copper Corp., McGill, pres.; **H. A. Johnson**, supt. of Tonopah Mining Co., Nevada, Tonopah, first v.p.; **E. A. Julian**, v.p. Goldfield Consolidated Mines Co., Goldfield, second v.p.; and **Henry M. Rives**, Reno, sec.-treas.

Warehousemen elect—Officers for the coming year have been elected by a number of Western chapters of the American Steel Warehouse Association, Inc. They are:

Colorado Chapter—Pres. and chapter director, **H. V. Waterman**, Hendrie & Bolthoff Mfg. & Supply Co., Denver; v.p., **J. H. Singleton**, C. A. Crosta, Inc., Denver; and sec.-treas., **A. M. Hays**, Hendrie & Bolthoff Mfg. & Supply Co., Denver.

Intermountain Chapter—Pres. and chapter director, **H. R. Lambrecht**, Salt Lake Hardware Co., Salt Lake City, Utah; v.p., **L. S. Packman**, Steel-Engineers Co., Salt Lake City; and sec.-treas., **H. C. Kimball**, Z. C. M. I. Wholesale Hardware Division, Salt Lake City.

Northern California Chapter—Pres. and chapter director, **Paul M. Oakley**, Geo. R. Borrmann Steel Co., Oakland, Calif.; v.p.'s, **James D. Tayler**, Tayler & Spotswood Co., San Francisco, and **Wakefield Baker**, Baker & Hamilton, San Francisco; and sec., **Lyle Kindorf**, Gilmore Steel & Supply Co., San Francisco.

Pacific Northwest Chapter—Pres., **Fred Holcomb**, Woodbury & Co., Portland, Ore.; v.p., **R. W. deWeese**, Electric Steel Foundry Co., Portland; sec.-treas., **H. F. Morrow**, Pacific Metal Co., Portland; and chapter director, **O. J. Ulrich**, Pacific Machinery & Tool Steel Co., Portland.

Washington Chapter—Pres., **J. C. Richards**, Hunt & Mottet Co., Tacoma, Wash.; v.p., **John Robbins**, A. M. Castle & Co., Seattle; sec.-treas., **Arnold S. Allen Jr.**, Seattle Hardware Co., Seattle; and chapter director, **Harold Barde**, Barde Steel Co., Seattle.

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REGIONAL REVIEWS

THE COLUMBIA EMPIRE

PORTLAND—This area's business and economic scoreboard, as the first year since V-J enters its final quarter, shows that the pessimists were only half right when they openly predicted a serious collapse—unemployment on a major scale and huge piles of idle machinery—when the wartime industrial "boom" collapsed.

They were right on the prediction that strikes would delay the materials needed for reconversion. The steel strike, the elec-

trical strike and others actually have handicapped the construction and equipping of industrial expansion in the Columbia empire.

They also were right in the prediction that domestic troubles in the Far East would prevent the resumption and expansion of foreign trade—one of the major factors on which new West Coast industries will be and are being based.

But the optimists proved right on un-

employment, retail business, new industries, bank deposits, bank clearings, payrolls and the general prediction that "we will hold many of our wartime gains and maintain considerably above prewar records."

Unemployment reached its peak, some 60,000 in the first quarter of 1946. By the beginning of the second quarter it was down to 50,000—and only 2,000 of that drop were those who had exhausted their unemployment benefits. The total is steadily declining as service men return to their old jobs after interim vacations. Many women war workers did not intend to return to industry after shipyard layoffs, but naturally drew unemployment compensation to which they were eligible.

State officials expect lumbering, construction, food processing and trade in Oregon will provide 15,000 new jobs in June. Another 5,000 drop in shipyard employment will be taken care of by additional jobs in forestry, mining, transportation, and service industries, the unemployment compensation commission predicts.

These changes will bring the state's covered (unemployment compensation) employees to 258,000, only 35,000 less than June before the war's end.

And all this without the foreign trade and strike-bound materials that will bring their own postwar expansion when the bottlenecks are cleared.

Too Little Power

The immediate start of operations by Reynolds Metals Company at the Troutdale aluminum plant near Portland and the Trentwood and Mead rolling mills and reduction plant at Spokane by Permanente will use up virtually all the surplus power available from the Bonneville administration, indicating an industrial power load in the area closely equaling wartime.

Dr. Paul Raver, Bonneville administrator, says, "projected plants" make construction of McNary and Foster Creek dams and installation of new generators at Grand Coulee a necessity.

The Vancouver shipyard will be used by the Navy in its "operation mothball" until next January. A \$25,000,000 housing program has been outlined for Astoria to care for added personnel at sea food packing plants and the Navy lay-up basin.

A 2,000-home housing project at the outskirts of Portland, with its own sawmill and financing by one of the Pacific Coast's largest loan companies, already is started and realty agents are swamped with orders. FHA has issued priorities for veterans' homes in Oregon and southwestern Washington for a value of more than \$50,000,000.

To prepare for the water traffic that will keep Columbia Empire industry busy—foreign orders for goods already are piling up—the Portland public docks commission is completing final engineering for \$3,500,



"Cold Spots" do occur—no matter how carefully a plant heating system is laid out. Dravo Direct Fired Heaters offer a simple quick solution that requires no alteration in the existing heating system. Simply truck in a Dravo Heater, connect it to an oil or gas fuel pipe and a power line and your "cold spot" is made comfortable with economical heat!

Dravo heaters are shipped to you complete, ready to connect and operate. Oil or gas fired heaters regularly yield 80-85% efficiency. There's nothing to freeze up, so no "stand by" loss is required. No specialized attendant is needed. Maintenance is negligible. Bulletin 514-A "Direct Fired Efficiency" is yours for the asking. —Address Dravo Corporation, Heater Department, 300 Penn Avenue, Pittsburgh 22, Pa.



000 of additional quay-type dock facilities.

District CPA officials have approved the proposed \$7,500,000 pulp and paper mill for Weyerhaeuser at Longview. Plans are virtually completed. Crown Zellerbach already has started its \$15,000,000 paper mill expansion for West Linn in Oregon and Camas in Washington.

The Pennsylvania Salt Manufacturing Company has received CPA approval for a new \$1,000,000 chemical plant adjacent to its present Portland electro-chemical plant. Work on the first \$300,000 of new buildings already is under way.

Spencer Packing Company has started construction in the Guilds Lake (housing project) area of Portland on a new \$1,000,000 food processing plant to be completed for the coming canning season barring unforeseen material shortages.

Improving the unemployment picture is the fact that there now are nearly 11,500 firms in Oregon large enough to pay into the unemployment compensation fund, the largest number in history. It is a net increase during the past year of more than 1300.

In one month this year, Portland added 29 new industries, an all-time record. There were 55 new industries added to Portland's list in the first four months of the year.

Among them was the Quaker Oats Company, which is taking over the Kerr-Gifford elevators on Portland's waterfront, a few years ago the largest grain elevators on the Pacific Coast. The company will spend upwards of \$2,000,000 next year in remodeling and construction for a cereal processing plant with deep water adjacent cargo docks.

With Multnomah county realty sales hitting \$15 million a month for the first time in history, with bank deposits steadily climbing above the new \$1 billion mark set in Portland earlier in the year and with bank clearings above a year ago at the \$333 million mark, the optimists are having a hey-day in the Columbia empire telling the wartime pessimists "I told you so."

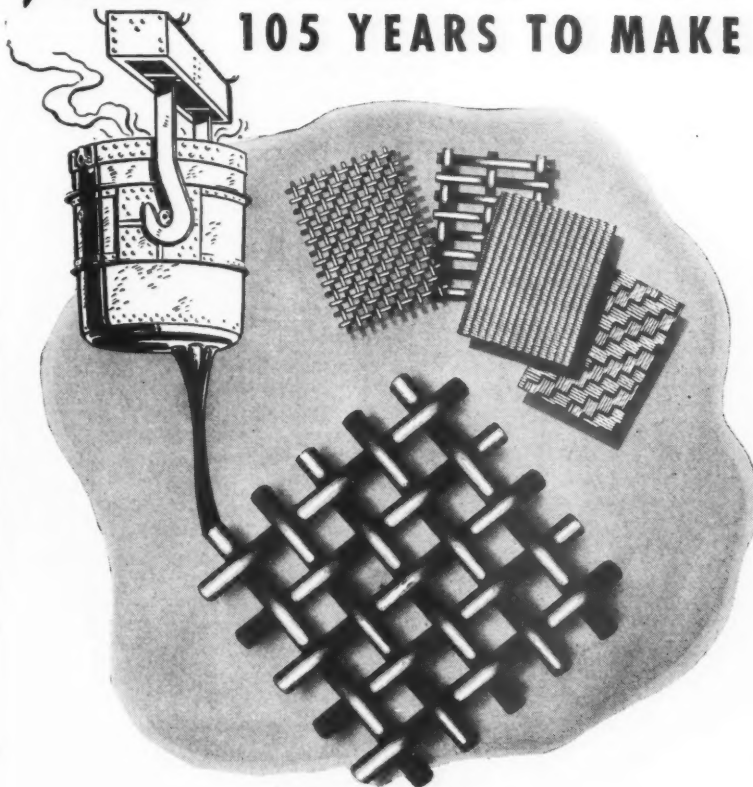
Pulp Supply To Remain Short

Though a tight situation will persist in paper and other wood pulp products during 1946, according to Fred C. Stevenot, president, Puget Sound Pulp and Timber Company, 1945 saw probably the largest year in the history of the wood pulp industry.

Preliminary figures indicate that approximately 9,471,000 tons of pulp were produced in the country domestically during 1945 as compared with 9,446,000 tons in the preceding year.

Though difference between production records for the two years was small, the first six months of 1945 saw production nearly 200,000 tons ahead of the same period for the year before.

The Screen THAT TOOK 105 YEARS TO MAKE



A TIP FROM OLD MAN COMPETITION:

Stopping a mosquito, grading coal or filtering a medicine calls for wire screening. And each use makes certain demands on the screen used. It's the adding of the necessary qualities to meet these specific demands that makes the source of your wire screening so important.

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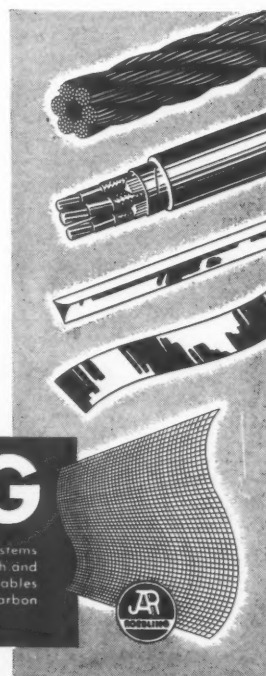
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PACEMAKER IN WIRE PRODUCTS



REGIONAL REVIEWS

THE WASATCH FRONT

SALT LAKE CITY — On the whole, Utahans were pretty well satisfied and encouraged by the long awaited bids on the Geneva steel plant.

Some had hoped that United States Steel Corp. would commit itself to spend a larger amount on additions to the Geneva properties than the \$18,600,000 minimum contained in the offer. But this sum was large enough to soothe fears that the plant might be used only for producing unfinished steel

for finishing elsewhere, a condition not regarded as desirable.

The cost of installing additional stands of rolls to produce hot rolled coils for the proposed cold rolled sheet and tinplate plant at Pittsburg, Calif., has been estimated at \$7,000,000 to \$8,000,000. This leaves a substantial sum for some other finishing facilities and others may come later.

In the absence of specific information

about the "dark horse" bidders, the prevailing impression created here was that only two of the offers could be evaluated. There were hopes in some quarters, however, that some of the other bids would prove to be backed by enough substance to receive serious consideration.

The remark of Sam Husbands of the RFC, that he was disappointed with the amounts of the bids, indicated that he, too, was thinking in terms of the United States Steel and Colorado Fuel & Iron offers, because he certainly could not have been disappointed at the amounts in some of the other offers.

Most attractive feature of the Colorado Fuel & Iron bid from a strictly local viewpoint is the proposed expenditure of \$47,000,000 (government money) for conversion and finishing facilities. Least attractive feature is the fact that it would be a lease with the attendant uncertainty as to long range operation. And this, it is felt, would discourage plant investments in the area by prospective fabricating industries.

Best Guarantee

United States Steel's willingness to make a cash purchase and invest a large additional amount in the plant is regarded by public opinion as the best possible guarantee that the facilities would not be junked.

Such an offer too serves to dispel any lingering suspicions that there is a plot cooking to acquire the plant to keep it out of operation. These suspicions, incidentally, have been fed chiefly by occasional outbursts from Washington, D. C., such as the recent testimony of Wendell Berge, assistant attorney general, on the Bulwinkle railroad bill.

Benjamin F. Fairless, president of United States Steel, in commenting that the corporation had been asked by government officials to put in a bid, might well have added that he had been invited and importuned to bid by Utahans, both in official and non-official capacities. A quiet campaign was being waged from this state for several weeks prior to opening of bids to get the corporation into the bidding picture on the theory that it was in the best position to purchase, operate and market the products of the plant.

Strike Pinches

As Utah's nonferrous metals industry strike neared the end of its fourth month it was beginning to pinch in several directions. The state, county and school districts involved were beginning to worry about the loss of tax revenues.

Some lines of retail business and service trades began showing a downward trend for the first mite, the outgo from the unemployment compensation fund soared above income for the first time since the program was established and relief costs were spiraling upward.



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But the report of the industry's fact-finding board, recommending an adjustment in the lowest common labor rate plus an 18½ cents per hour increase, gave no promise of bringing a speedy solution. Operators, most of whom did not attend the fact-finding board hearings, received the report in silence. They expected the recommendations that were offered and inferred that the situation had not been changed by the fact finders going through some motions which everyone knew they would go through.

The hard core of the impasse, apparently, is price relief. And it is price relief, not increased subsidies, that the industry wants. Hard-headed operators can see no reason why they should go on depleting ore reserves at prices which in some instances are below the world market.

Manpower Shortages

Mining companies which were not struck have continued to operate but, paradoxically, they are still hampered by manpower shortages despite growing unemployment. One reason for shortage of men in the mines is that the work is not attractive to a majority of workers.

One operator offers as another reason the \$1 per day assessment by the union to finance relief for the striking mine, mill and smelter workers. This is a sizable cut out of the paycheck and operators suspect that men are leaving them to find employment in other industries and thereby escape the contribution.

The three closed companies represent more than 70 per cent of the state's employment in the industry and a substantially larger percentage of the total production.

Foster and Kleiser Enter Brick Business

It is a far cry from the outdoor advertising business to that of manufacturing and selling bricks of adobe but it isn't too far for the Foster and Kleiser Company.

During the war the firm got into the adobe brick business through its activities in producing camouflage materials for the government.

The bricks, manufactured under the name of Caladobe, are made of soil, fiber, water and a precise proportion of "Bitudobe," an emulsified asphalt stabilizer that gives the finished brick the maximum resistance to moisture. Because of this asphalt stabilizer, the Foster and Kleiser bricks have none of the disadvantages that made the old adobe bricks of little value to modern construction needs.

Demand for the bricks has been sufficient to warrant expansion of the manufacturing business from Carmel Valley where it began to setting up plants at Sacramento, Fresno and on the San Francisco peninsula.

1. Horizontal inlet and discharge

2. Horizontal inlet, vertical discharge.

3. Vertical inlet, horizontal discharge

4. Vertical inlet and discharge

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REGIONAL REVIEWS

TEHACHEPI TO TIJUANA

LOS ANGELES.—More and more, in these days of scarcities, Western industry is paying the penalty of youth.

Since two out of every three southern California manufacturers got their start during the war, the number of newcomers without long-established connections with suppliers is very large. These are the ones who suffer when the time comes for the raw materials distributor to parcel out his meager supply among his customers. Nat-

urally it is the old, well-established customers who get preference, and the canny supplier is likely to appraise recent names on his customers list with an extremely fishy eye.

To make matters worse, drying up of the pipeline from Eastern mills has caused general hardship. This situation has been rapidly getting worse, but reached the crisis state when three major suppliers of steel sheet served notice on their customers that

they were withdrawing from the Western market because their total production could be absorbed close at home, without the extra cost of transcontinental shipment. To advocates of Western steel production, the moral is, of course, familiar.

Nimblest among the small operators who have been successful in keeping production going are the gift, toy, and artware manufacturers. Ingenuity, plus heavy reliance upon scrap materials, has enabled most of them to find something they can make with what is at hand. Gadgets thus continues to flourish.

Less fortunate are those who must depend upon standard materials, and with the coal strike now making it plain that expected spring deliveries cannot arrive before late fall, a good many manufacturers have been forced to make a hard choice—either to close down and go fishing, or to curtail operations to a rate that can be maintained evenly for the next few months.

Most choose the latter course. The present materials inventory is pro-rated over the next few months and the staff is pared down to the size needed to maintain production at that rate.

What failures are occurring among manufacturers can usually be traced, not to any dearth of good product ideas, nor to inability to find markets, but rather to (1) lack of materials, or (2) "housing" difficulties.

In many "distress cases," RFC's small business priorities on war surplus materials have proved a life-saver. On the other hand, many a small plant that has been paying \$75 a month under its lease, now finds that on expiration the rate will be increased to \$450. This is a problem that may well spell bankruptcy.

March the Biggest Month

March was the biggest peacetime month of expansion in Los Angeles history, but April saw a considerable slackening. The reasons, of course, are fairly obvious. CPA building controls have slowed down non-housing construction to a walk, while existing space for both commercial and industrial use long ago reached the saturation point.

New small businesses are having to take up quarters in remodeled residences, little factories must get their start in backyard garages, and office buildings have evicted so many luckless tenants that a manufacturer's agent, for instance, is lucky if he doesn't have to transact most of his business out of his home.

Sardine-like doubling up of small businesses is typified by one local office, now jammed with desks at which a public accountant, an income tax expert, an advertising agent, and an attorney attempt to conduct their discussions with their respective clients in a single room, with not even partitions for privacy!

Small business has displayed an amazing birth rate and wherever space can be had, new stores, shops and service establish-



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Scores of industries have found BEAN Industrial Pumps the answer to their high-pressure hydraulic pumping needs. Capacities 1 to 100 gallons. Pressures 100 to 5000 lbs. per square inch. Lightweight combined with extreme ruggedness. Enclosed design with working parts operating in a constant bath of clean oil.

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ments have been springing up, backed by the hopes and the savings of war workers and servicemen alike. In San Diego, for instance, 1,745 such enterprises have opened up within the past year and are credited with keeping at least 10,000 names off the unemployment rolls. About 40 per cent of the new business men are said to wear discharge buttons.

San Diego Situation

A Chamber of Commerce survey showed 135,000 employed in San Diego County on January 1, as against 107,000 in 1940. New electric power and telephone service applications are backlogged far beyond ability of the companies to fill them—yet 28,500 people currently are unemployed and 20,000 are drawing unemployment compensation. Marvellously, department store sales continue at about 250 per cent of the pre-war rate, reflecting the enormous purchasing power pent up in war savings.

A bumper crop of peewee automobiles seems to be one of the first products of this area's reconverted aircraft plants. Kaiser-Frazer hopes to start production in September of a radically new, low-priced car, from its quarters at the erstwhile Douglas Aircraft plant at Long Beach.

At San Diego, the Bobbi Car Company, which has reached final stages of dickering with War Assets Administration for a portion of Consolidated-Vultee Plant No. 2, still is expecting to get under way soon with the tiny, Fiat-like car for which they report receipt of a huge backlog of foreign orders.

Meanwhile, Solar Aircraft is under way with a still smaller line of rubber-tired rolling stock, having just started an assembly line on its initial order for 100 midget racing cars.

Teamed up with Air Associates, Inc., Solar will produce and distribute stainless steel body kits with interchangeable parts. In pre-war days, the little racers were always hand-built, with the result that a serious spill might deprive the driver of the use of his car for weeks.

Stainless steel, incidentally, may figure importantly in San Diego industry, now that a local foundry will be a nearby source of the raw material. Ryan Aeronautical, during the war, was one of the largest users of stainless steel sheets in the country.

Top Flight in Plastics

A challenge to another local industry to produce its own raw materials has been issued by the L. A. Chamber of Commerce, which lists 299 plastics fabricating and molding plants now in operation here. Los Angeles County, says the Chamber, has become one of the three largest plastics centers in the country, and has excellent peace-time markets in the local aircraft, automobile, houseware, and clothing industries. Opportunity is knocking.

Says the Chamber—Why not an integrated industry, based on Western wealth of raw materials, with cheaper local pro-

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duction of the plastic sheets, powders, tubes, rods, and fibers that are now shipped in from the middle west and east?

Western industry has matured to the point where it should look into the freight rate situation from a new and opposite point of view—the viewpoint long held by Eastern interests, who have sought "special commodity rates" on their products on the West Coast.

This rather novel idea likewise has been advanced by the Chamber, which is now studying the many new local products that could well reach national markets.

At present, the Chamber report says, there are more "special commodity" trans-continental freight rates westbound than

eastbound. Some adjustments already have been made for many local industries that have established their markets in the east, but there are many more that should enjoy these benefits.

Just how largely military demands are figuring in the immediate outlook of the aircraft industry is indicated by the fact that out of a current \$200,000,000 backlog of orders on file with Lockheed, only \$55,-430,000 are from commercial sources, the balance being from military agencies.

Never-ending research, of course, is recognized as the price that must be paid for rapid industrial advancement, and the Government's large stake in the future of

U. S. aviation constitutes that industry's chief bulwark in this transition period.

Lockheed presently is developing an advanced type of high-powered gas turbine engine, which probably will be licensed for production by Menasco. But as to any immediate boom in flivver planes for the family, Lockheed officials take a guarded "wait-and-see" attitude. Meanwhile they are conducting their own research into this field, in the belief that "present types of planes do not meet the basic requirements of low cost and high quality, which will be essential to mass acceptance of personal flying."

Significant in the long-range planning of Western utilities is the fact that the expected drop in power consumption has not materialized. Instead, the peak of industrial demand has flattened after only a relatively slight drop, while residential and commercial loads have risen sharply and continue to advance. The usually conservative engineers of the L. A. Bureau of Water and Power report that industrial and population growth have outstripped all figures indicated in their studies.

Confident of future growth, the municipally owned utility system has allocated \$17,000,000 for two new 75,000-kw. generators, which it hopes to have in service by 1948.

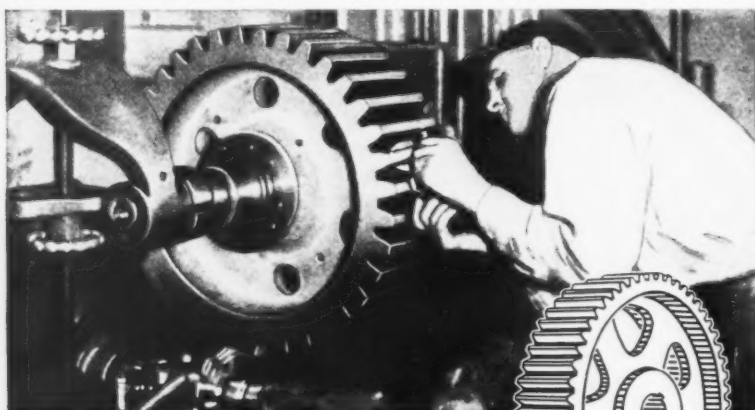
A swing away from the heavy industries of war to the light industries of peace is conspicuous in figures released by the State Department of Industrial Relations. Los Angeles County, for example, shows less than half the number of employees now at work in the heavy industries as compared with one year ago.

No such drop has occurred in the non-durable goods field, where about 92,800 were working this March, as against 94,000 in the same 1945 month. Indeed, the apparel industry, for one, is currently at an all-time high. Also at peak levels are stone, clay, glass and leather products. Other job-producing fields now expanding include petroleum production, the movies, hotels, and laundry, cleaning, and dyeing services.

Mounting unemployment in the Los Angeles areas now has embraced nearly a quarter of a million people. Raymond Krah, U.S.E.S. director, points out that this is 40 per cent more unemployment than in 1940, although population has grown only 29 per cent since then.

Surprisingly, however, fewer persons are drawing unemployment pay now than at any time since last October. This is true partly because many have now drawn the last unemployment pay check to which they are entitled under the law, but partly also because there are fewer new cases of unemployment.

Thousands of veterans, of course, are drawing Servicemen's Readjustment Allowances, but this influx levelled off late in March. It now looks as if the immediate effects of demobilization have passed their peak.



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A new source of fabricated materials for hundreds of Western manufacturers will go into production within 60 days, when the now idle Bohn aluminum plant at Torrance, California, resumes operation under management of Harvey Machine Co., Inc.

Built by DPC as part of the military's plan for enormously expanding the West's aircraft production, the Bohn plant is located adjacent to the huge Alcoa aluminum reduction plant. During the war it converted ingots poured from Western raw materials into extruded fittings and other parts which were rushed, often smoking hot, to local subcontractors engaged on airplane components. Now it will turn out brass and aluminum extrusions for producers of screw machine products, plumbing fixtures, window frames and sashes, builder's hardware, furniture, truck bodies, and other metal goods.

Gratified at seeing this large "war baby" mature into a sturdy member of the industrial community, southern California production officials also are hopeful that restoration of the plant to production may increase output of parts for locks, plumbing fixtures, and other building hardware which currently is a bottleneck in the housing problem.

Doubled Output Of Phosphate in West

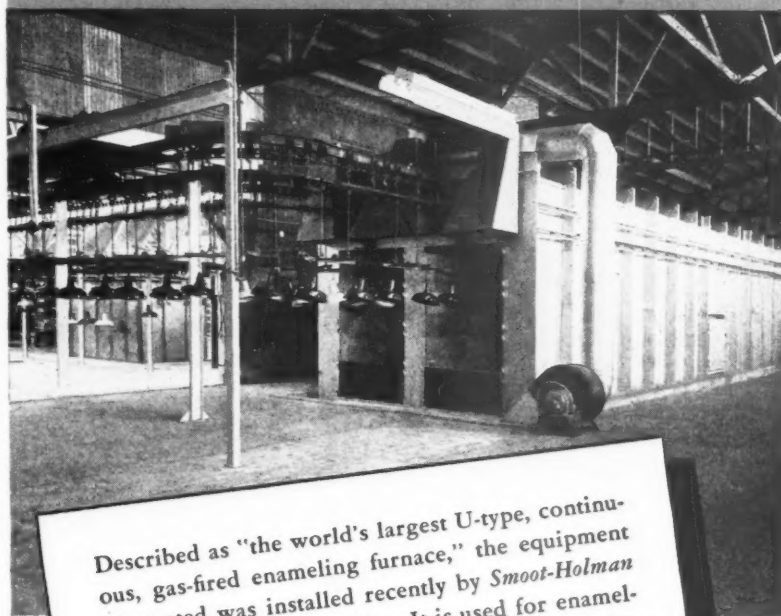
Two of the largest producers of phosphate fertilizer, developed from the phosphate deposits concentrated at the joining point of the states of Utah, Idaho and Wyoming, are planning to double their capacity in 1946, the special phosphate committee of the Western States Council has reported.

These concerns are Stauffer Chemical Company, whose present capacity is 140,000 tons annually, and the Simplot organization at Pocatello, Idaho, whose output has been 150,000 tons. The third Western factor is the fertilizer division of Anaconda Mining Company, producing 120,000 tons.

Total amount of 18% basis superphosphate used in the 11 Western states in 1943 was 248,300 tons, the committee reported, out of a total of 411,000 tons of all kinds of fertilizer. If the Western percentage of land fertilized were brought up to the national average of 20%, Western consumption would reach 600,000 tons. The Western percentage is now 8%, all of these states now being below the national average except for California, which had a record of 21%.

In view of this expanded production and the educational programs for increased use of fertilizer, there is no need for government entrance into the business as proposed in the Hill-Bankhead and Flannagan bills now before Congress, the committee reported through its chairman, E. J. Fjeldsted of the Ogden Chamber of Commerce.

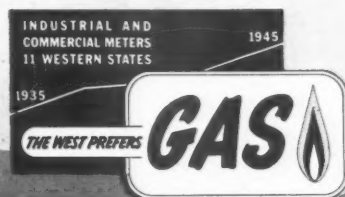
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REGIONAL REVIEWS

SIERRAS TO THE SEA

SAN FRANCISCO—Between the national coal strike, with its crippling effect on the supply of refrigerator cars for shipping fresh fruit and produce eastward, and the involved jurisdictional fight between AFL and CIO over the canneries, which already has caused big losses of fresh asparagus, the agricultural economy of central California is badly upset.

Continuation of these two situations may result in a disaster that would have

serious effects on industrial production that is coupled to agriculture. Before the war, the canneries constituted the largest single bloc of industrial operations in the northern part of the state, and they are still on the top floor in importance.

Meanwhile the coal and other strikes elsewhere have set back for probably two years or more much of the industrial expansion in this area by eastern manufacturers. Strikes and material shortages have

so upset their plans and operations that these concerns have been snowed under with unfilled orders, and top executives cannot be spared to come West to establish new operations out here.

Local manufacturers have been affected similarly by the national situation. One of their chief difficulties is getting suitable men, despite the fact that the unemployment compensation rolls have been increasing until recently. Despite all this, \$5,000,000 in industrial expansion for northern and central California was reported for March.

An overall industrial promotion plan is being undertaken by the new San Francisco Bay Area Council, representing public bodies and private enterprise in nine counties, and an initial fund of \$100,000 has been talked of. Its activities are intended to be entirely separate from the work of individual communities and chambers.

There is still much to be worked out in the proposed second bridge across San Francisco Bay. The State Toll Bridge Authority is making preliminary plans for a survey, which will need financing. Communities on the east side of the bay are willing to help provide the funds, but there is considerable opposition on their part to making motorists pay for the cost of ascertaining how to get the transcontinental railroads into San Francisco.

These communities would like to keep the terminals on the east side of the bay, and the Toll Bridge Authority has in mind a union terminal that would be located north of the toll plaza of the present bay bridge, on what are now tide flats. The east bay group is also opposed to having the surveys tied up with the Reber plan, which calls for making a fresh water lake out of the southern portion of San Francisco bay by building a causeway from shore to shore, as well as ambitious ideas for doing a general face-lifting job for the rest of the bay.

Employment Estimates

Reports that many people have exhausted their 26 weeks of unemployment compensation are beginning to trickle in, but it is still too early to forecast definitely whether this will mean more actual employment or merely that such people will be less choosy about jobs.

Professor Samuel C. May of the University of California and Alfred G. Norris, an independent economist, have issued separate forecasts of California employment and unemployment for 1946-47. The former predicts 905,000 to 1,080,000 unemployed, and the latter 810,000 to 1,251,000. At the first of April, unemployment in the three Pacific Coast states, as reported by the U.S.E.S., had reached 685,000, but since then there has been a decline.

Both men lean toward the pessimistic extreme, whereas statistical experience usually justifies more moderate forecasts.

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REGIONAL REVIEWS

CONTINENTAL DIVIDE

DENVER—Revealing "low down" on the critically tight housing situation in Denver is being presented to business groups in the area by Aksel Nielsen, executive vice president of the Title Guaranty Company and recognized leader among the city's realtors.

Denver is No. 2 on the list of U. S. cities in which housing is most critical, with only Los Angeles presenting a greater shortage of living units, according to the realtor's ratings. How Denver got into this predicament is explained by Mr. Nielsen as due to two causes.

First reason is that Denver entered the war-and-peace boom era with a shortage of living units. Even during the depression years, when other cities had vacancy percentages of 10 to 15 per cent, Denver had only 6.4 per cent vacancy in its available living units. Since 1937 the percentage has been less than three per cent, definitely on the shortage side. Today's vacancy figure is virtually microscopic.

Second reason for Denver's acute housing shortage, according to the straight-shooting young realtor, is the concerted opposition to public housing that has been evident in Denver since public housing first appeared on the scene during the depression. The opposition to government-subsidized housing has been led, of course, by real estate operators.

Their opposition, they now admit, has contributed very significantly to Denver's current dilemma, which is costing the city many new industries and business enterprises as well as making life miserable for thousands of the city's residents, both old and new.

When asked if this was something of a lesson to the realtors, Aksel Nielsen smiles genially and says frankly that they would do the same thing again and again and again because they hate "socialism."

Apart from the question of who is to blame for what, there is no denying that Denver will have residential construction galore for many a year to come. Since 1940 a total of 11,450 living units have been constructed, and a sober calculation of the rock-bottom needs of the city show that 15,200 living units must be built in the next three years just to get back to normal, or as Nielsen puts it, "to get rid of OPA." He says OPA and rent control will remain—and should remain—so long as there is such a shortage of housing as to foster inflationary rents and selling prices.

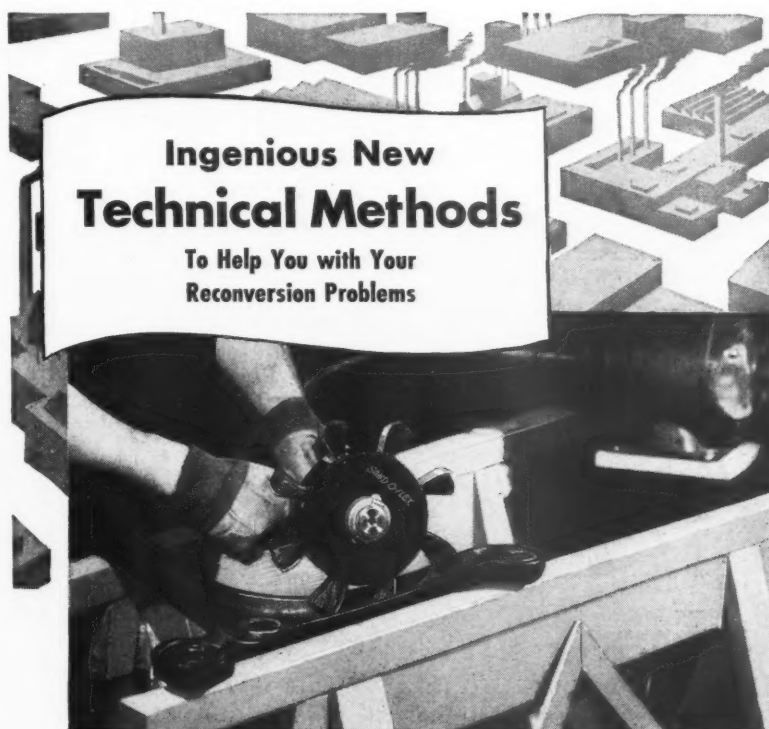
Today, despite the shortages of materials and of labor, Denver has 2,600 living units under construction compared with an aver-

age of 1,100 per year for the past 10 years. The lid will come off within a few months, and then Denver—like every other city—really will see some building.

One major figure in the construction industry is betting that there will be such a wave of home building that Denver will be over-built within the next three years. Nielsen and his buddies say such is literally impossible. *Quien sabe?*

Colorado's Steel Mills

As the final disposition of the great new steel plant at Geneva, Utah, nears a showdown, residents of Colorado are being reminded by the Colorado Fuel & Iron Co. that their own Minnequa steel works at Pueblo constitute a whale of an industry. Last year railroads were paid about \$15,000,000 to haul raw materials into the mills from Colorado, Wyoming (where the ore is), and other nearby states, and to carry \$57,000,000 worth of finished products to world markets. The 11,000 employees, including 6,000 steel workers and nearly as many miners, received \$24,602,007 last year. Livelihood of 114,000 persons is



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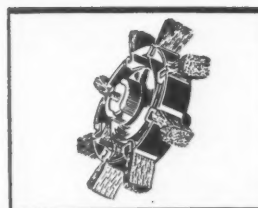
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To help speed production in dry, dusty work atmosphere, many mills and factories urge workers to chew gum to help relieve dry throat. The reason: Because dust causes throat irritation and dryness—but chewing Wrigley's Spearmint gum helps keep workers' mouths moist and fresh. The result: Reduced work interruptions and "time outs" to the drinking fountain. Even when workers' hands are busy, they can refresh as they work "on the job." And the chewing action helps keep workers alert and wide-awake.

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directly connected with the gigantic operations, or more than one-tenth of the total population of Colorado.

The Minnequa plant produces annually about a million tons of rails, fence, structural, reinforcing and bridge steel, posts, rods, bars, spikes, grader blades, nails, cast iron pipe, nuts, bolts, staples, beams, wire, coke, fertilizer, tuluol, tar, benzol, xylol and naphthaline.

Incidentally, the C. F. & I. is the largest producer of bituminous coal west of the Mississippi river. Since it began its operations in 1871, it has mined 150,000,000 tons of coal. All of which adds up to a very understandable interest in what happens at and to the Geneva steel mills.

Colorado Industries

What is an industry? Colorado newspapers continue to call the tourist business the state's biggest industry, pointing out that it totaled 123 million dollars in 1941 when agricultural products added up to 73 millions, livestock and dairying amounted to 65 million, and gold and silver mining together totaled 18 million. But they admit that manufactured products brought a grand total of 332 million, which brings the highly-advertised tourist business down to about its size.

This year the tourist trade will be terrific, but wait until you see what a volume of real industrial activity there is, too! The upswing in all phases of construction,

manufacturing and processing, mining, oil, lumbering, transportation and related lines will set some interesting records, in spite of strikes and delays in getting equipment and materials.

Indians Shun "Progress"

Southwest Indians are up in arms, almost literally, to resist a series of moves that seems to them the greatest threat they have faced since they rebelled and drove their Spanish overlords out for a 12-year period between 1680 and 1692. At that time they outnumbered the whites; now the situation is reversed. But today's problems are the sort that make some of the Indians almost see red.

Most imminent is the matter of the reclamation projects that seem certain to wipe out some of the old pueblos and cover their ancient burial grounds and garden plots with the waters of mammoth storage reservoirs.

The government's generous offer to find better land for the displaced Indians meets the grim rejoinder that the spirits of countless generations are forever associated with the old traditional sites and that no other land, however productive, will do. A few of the younger Indians, especially among the G.I. returnees, think the quality of the land is more important than its spiritual associations, but among Indians the older, presumably wiser, heads prevail.

The reclamation bureau's engineers, confronted with very real flood and reclamation problems, point out that the lower Nile valley had some very "sacred" and "priceless" antiquities, too, but that modern engineering has proved a blessing to the people there.

Still, the pueblos along the upper Rio Grande are something else again. And some of the poverty-stricken Navajo Indians of the San Juan basin, already living on a scale that seems as low as that of India's untouchables, face utter ruin if the westward flowing waters of the San Juan are dammed and controlled by the proposed project there.

The long-range problem is a tough one, too. Experience with American Indians of the plains and forests has convinced the Indian Service that the reservation idea is a mistake that should be wiped out as soon as possible. Assimilation of the Indian into the general populace is the only solution, which means ending the Indian's long period as a ward of the government and giving him citizenship and responsibilities the same as any other American.

But when this logical notion is applied to the situation found in the southwest, the formula doesn't seem to make such good sense. Here the "reservation" is not some unnatural thing forced upon a people, but a perfectly natural way of life for an urban-dwelling populace like the Pueblos or for a tribe of herdsmen like the Navajos.

Assimilation is an abomination in the eyes of the Indians of the southwest and a thought that brings sheer panic to the



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tourist-minded white citizenry of New Mexico and Arizona who make a pretty penny showing the old dwellings and quaint ways of the aborigines to free-spending visitors. As one cynic put it, "The Southwest's greatest industry is teaching the Indian how to wheedle the white man out of his *dinero* (money)."

Denver Post Views TVA

Water will run uphill, coal will be white as snow and cattlemen will love sheep-herders—these would surprise nobody in the Rocky Mountain "empire" as the *Denver Post* calls it, now that the once ultra-conservative government-hating *Post* has taken a good look at the Tennessee Valley Authority and found it a mighty fine thing—at least for its own region and its own people.

The *Post's* liberal, enterprising new publisher, Palmer Hoyt, found that the proposed Missouri Valley Authority was being given the silent treatment by virtually everyone in positions of authority or influence in the upper reaches of the Missouri Valley.

Sensing that the public was exceedingly curious about the MVA and its pattern-piece, the TVA, the new publisher sent a feature writer to Tennessee and other parts of the TVA region. That writer's articles, played up boldly in the *Denver Post*, have given Rocky Mountain readers a mouth-watering view of a new kind of democracy at work. They have been sold on MVA, by showing them what TVA is like, even in the eyes of its former enemies.

The *Denver Post* reports, candidly enough, that the MVA proposal is a "dead duck" at the moment and that the Pacific Northwest will probably have its Columbia Valley Authority set up and going long before sentiment in the Missouri Valley has ripened sufficiently to produce any action.

Incidentally, this year's dryness in the Missouri Valley probably will mean fewer destructive floods than usual, and the bitter and costly object-lesson that "something has to be done about the Missouri" probably won't be as great a factor this year as usual. In normal years, the rampaging Missouri can be counted on to make such a menace of itself that even the on-the-fence people in the upper basin states begin to see that maybe their river does need some managing.

Spurred by the MVA proposal, the Bureau of Reclamation and the Army Engineers decided they had best stop their perennial squabbling and work together sensibly before the Congress brushed them right out of the Missouri Valley picture. Consequently, their compromise Pick plan now is being launched to spend millions of dollars already authorized for flood control, reclamation and channel improvement projects up and down the meandering "Big Muddy." Perhaps the *Post* will cover them, next.

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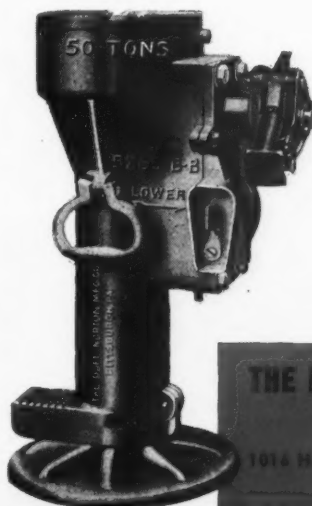
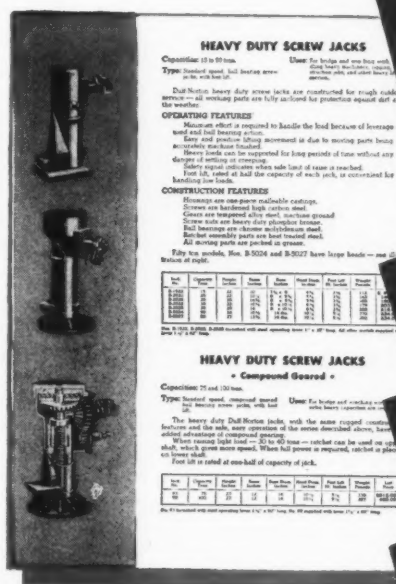
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REGIONAL REVIEWS

OLYMPICS TO THE COEUR D'ALENES

SEATTLE—Of those three prime necessities about which we learned in school—food, clothing and shelter—two of them, food and shelter, are large current topics on the Northwest Frontier.

The principal food item under nationwide consideration, wheat, is something of a storm center in these parts. Reduction of Washington State stocks by government shipments overseas caused a 14 million bushel shortage in April. The state tried to embargo further shipments by withdrawing state inspection, but the federal government torpedoed that by sending in their own inspectors, so the state gave up.

Forthwith the U. S. Department of Agriculture solemnly assured the state that wheat stocks would not be lowered to the point of imperilling the livestock and poultry industries. Meantime bread and other wheat products became scarce early in May from the government making off with 25 or more per cent of the wheat for foreign uses.

The virtues of the hybrid corn developed in Illinois a few years ago, principally productivity and disease resistance, are well known. Now there appears an analogous

wheat, developed over the past 17 years by one J. P. Nelson of Oakesdale, Wash., in backyard plots.

Large scale trials of this "Victory" wheat are being undertaken this year by 84 farmers in Idaho and Washington, who have planted 12,000 acres in various types of growing country. Advantages enumerated are approximately double the yield (60 or more bu./acre) of best other types, a very long and heavy root going 18 to 26 inches into the ground which will carry the crop through hot, dry weather, and about half as much seed required as for regular wheat.

The plant stools heavily, sending up 20 to 80 stalks from one kernel. The stalks are heavy, the size of a lead pencil, are 4 feet high and have a deep green, inch wide foliage. The present demand for seed exceeds the supply, but Nelson expects to have an ample supply this fall, since he has an option to buy part or all of the 1946 production back as seed.

Housing and other construction now operates under that newest of the alphabet family, the CPA. The CPA district office in Seattle approved (and sent to Washington, D. C., for final blessing) quite a few

million dollars in commercial and industrial construction in the first month of its existence, April.

Largest industrial item was a \$7 million sulphite and pulp mill at Longview, Wash., for Weyerhaeuser Timber Co. Another good sized item was a \$941,000 wall board plant at Shelton, Wash. In the line of public buildings, \$6.7 million for the University of Washington was approved principally for a new medical center (the university is going in for four year medicine when the center is ready).

However, no noticeable increase in house construction has been seen since the freeze on non-essential building went into effect. The deplorable shortage of materials of all kinds is proving an immovable obstacle, in spite of all intended helps by restrictions.

Partially completed houses stand for weeks without a tap of work being done, waiting for such items as gypsum sheet lath (wood lath is coming back to a limited extent), roughing-in for plumbing, electrical and heating systems, hardwood floors, millwork, hardware, etc., ad infinitum, ad nauseam.

Beside material scarcity, costs are throttling house building. The National Housing Agency figures that on the Pacific Coast medium priced house costs have increased 87.4 per cent and low priced ones 96.3 per cent over 1940. The respective

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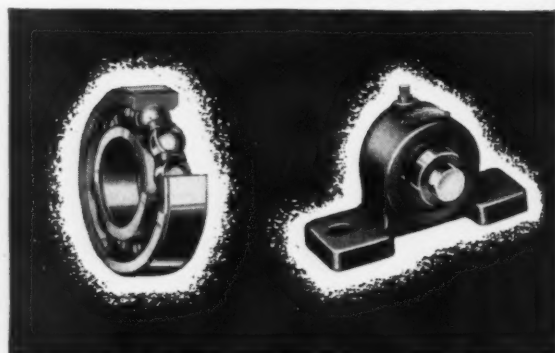
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rises since the war's end alone are 17.7 per cent and 14.8 per cent, respectively.

To combat some of this, in Seattle four veterans' national organizations and the AFL and CIO, have signed articles of incorporation for a non-profit cooperative group to build 1000 homes for veterans on a 320 acre plot near Seattle. Fifteen or 20 different plans are to be available and with mass production, it is hoped to reduce overall costs as much as 25 per cent.

Increased construction costs are having an effect on certain public works. Several road and drainage contract bids, as well as school and church work bids, have been rejected because they were considerably above presumably reliable estimates. A great many public buildings of all types—hospitals, schools, churches, etc.—have been planned and projected in Washington and Idaho but whether material will be available and costs even possible remains to be seen.

A mysterious announcement through the Wenatchee (Wash.) World in April of a government \$500 million "aviation field laboratory and research center" at Moses Lake Army Air Base in the Columbia Basin caused speculation for a couple of weeks, until it further leaked out that it was an intended supersonic research center for future high speed aircraft. This explained the astronomically enormous electrical power requirements: 750,000 kw.

Next it developed that the leak had been through Senators Mitchell of Washington and Cordon of Oregon. The U. S.'s respected aeronautical research body, the National Advisory Committee for Aeronautics, expressed pained regret at this untimely divulgence of an extremely important project. NACA feared the project would be harmed by creating premature prejudice in the federal budget bureau and an economy minded congress, to say nothing of interference in selection of site, arrangements for land and preparation of plans.

Public vs. Private Ownership

It seems that on the shores of Puget Sound electricity is produced and marketed by three different types of organizations:

1. Privately owned — Puget Sound Power and Light Company.
2. Publicly owned but financially controlled by RFC — The City Light Division of Seattle.
3. Publicly owned but controlled by REA — The so-called PUDs, meaning Public Utility Districts.

The first two organizations have been putt-putting along for some time in competition in the same territory and apparently getting along together fairly well. However, up-country in Skagit County, an ambitious champion of public ownership, PUD No. 1 of Skagit County, has for some time been determined to hack Puget Sound P. & L. into small pieces and feed these pieces to the other PUDs (and to itself) in the respective counties, thereby

getting private enterprise clear out of the picture in western Washington.

So late in March the commissioners of Skagit PUD voted to issue and sell \$135 million in bonds to purchase Puget Sound P. & L., without consulting the voters in the district—which is within the present legal rights of the commissioners.

The Governor of Washington raised an official eyebrow at this sudden move without notice to the state. Puget Sound P. & L. didn't say much, but waited. Questions were raised as to how Skagit County PUD could, in effect, go into the electrical business outside of Skagit County.

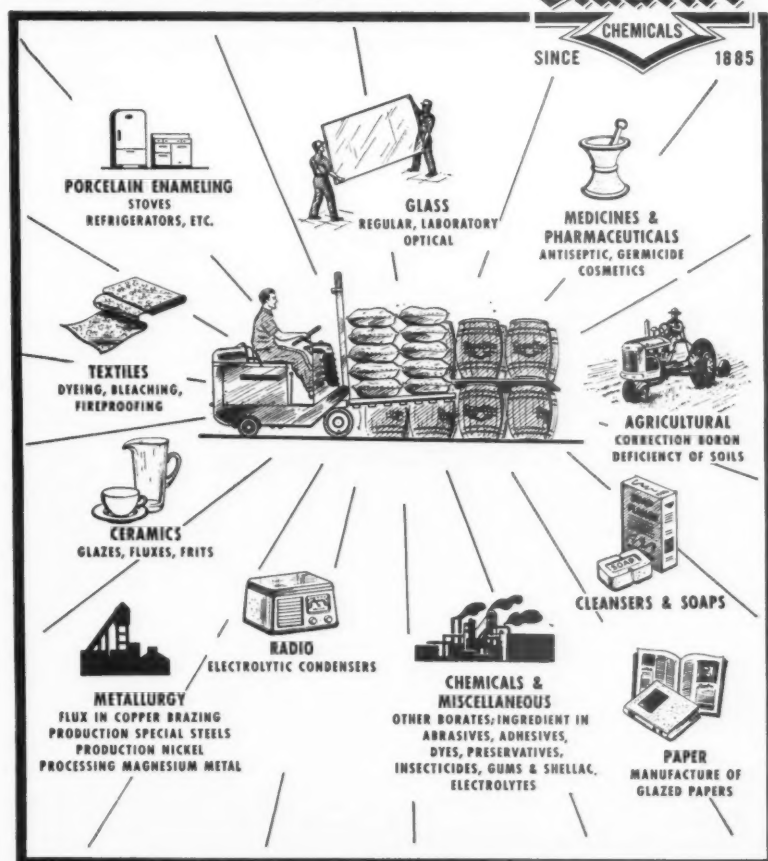
So, to test legality, the Skagit PUD secretary in a "friendly way" refused to sign the bonds and a purchase contract. The PUD itself then instituted a "friendly"

suit in Superior Court in Mount Vernon, Wash., to force its own secretary to sign the bonds and the contract.

Puget Sound P. & L. kept out of the court action, but Weyerhaeuser Timber Co. filed an intervenor's complaint against the action as an interested taxpayer. Nevertheless, after several days' argument the Skagit PUD won the suit and the secretary was duly ordered by the court to sign the bonds and contract.

Nobody knows yet whether Puget Sound P. & L. will sell out for \$135 million, or at all—that is, without a battle. As a backwash, three citizens filed an initiative with the State in Olympia calling for a referendum requiring that purchases by a PUD be approved by voters in the district, not by the commissioners only.

Borax and Boric Acid Key Materials in Key Industries



(This is the sixth of a series of charts on chemicals and their uses)

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ONE of the hottest battles on the politico-labor front in California during the coming months will be the campaign for passage of a Fair Employment Practices Act which will culminate with the November election.

Because the issue is racial in aspect—it is a measure designed to advance the work opportunities of negroes and other minority groups—it is certain to be hotly contested.

Though hard and fast lines cannot be drawn between labor groups in such a case, the CIO in general will support the passage of the act and the AFL will generally be against it.

Evidence of how interested the CIO is in the matter appears in the fact that the measure would not have got on the ballot at all except for the support given it by the CIO press. Because of that support, over 245,000 signatures were obtained by April 19, the last day for turning in signa-

tures, and of these very near the needed 178,000 were valid. Since 40 days more are allowed for gaining the missing few thousands, it is a virtual certainty they will be obtained.

Talk of Klan revival indicates the bitterness this FEPC measure may bring to the fall election.

But even if the Klan and similar organizations are revived, it is highly likely that their second childhood will be extremely short.

In the city of Richmond, which assertedly has a higher proportion of negroes than any other community in the state, over 8,000 signatures were reportedly obtained on the petition asking that the FEPC measure be placed on the ballot. Significance of this appears in the fact that registered voters in the city were only somewhat in excess of 10,000 and that the quota for petition signatures set for the city amounted to only 2,000.

New Women's Wage In Washington

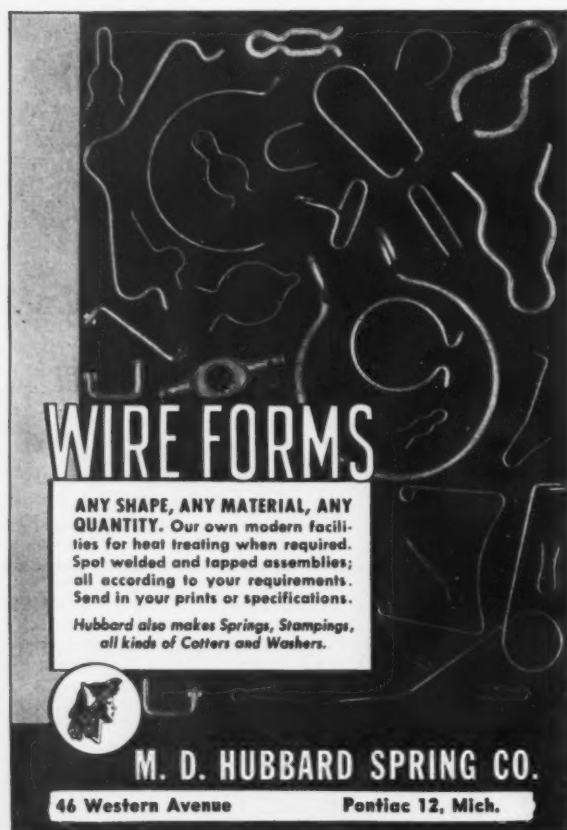
A new minimum wage rate of 65 cents an hour for women has been ordered in Washington, effective June 5. The scale is the highest in the nation and is 12 1/4 cents above the old rate. The order also provides:

1. No woman shall be employed more than eight hours in any one day.
2. No woman shall be employed more than 40 hours in any one week, excepting upon the overtime basis of one and one-half times the regular rate of pay for all overtime. Overtime may not exceed 8 hours and cannot be added piecemeal to any of the five eight-hour working days, but must be gained during an additional eight-hour day.

Excluded from the order relative to maximum hours of employment per week are women employed in commercial harvesting, packing, curing, canning or drying any variety of perishable food, and the canning of fish and shellfish, provided that they must be paid at the overtime rate of one and one-half times the regular rate.

When and When Not to Pay Unemployment Tax

When is a worker an independent contractor and when is he not was the question determined in three recent decisions of the California State Supreme Court.



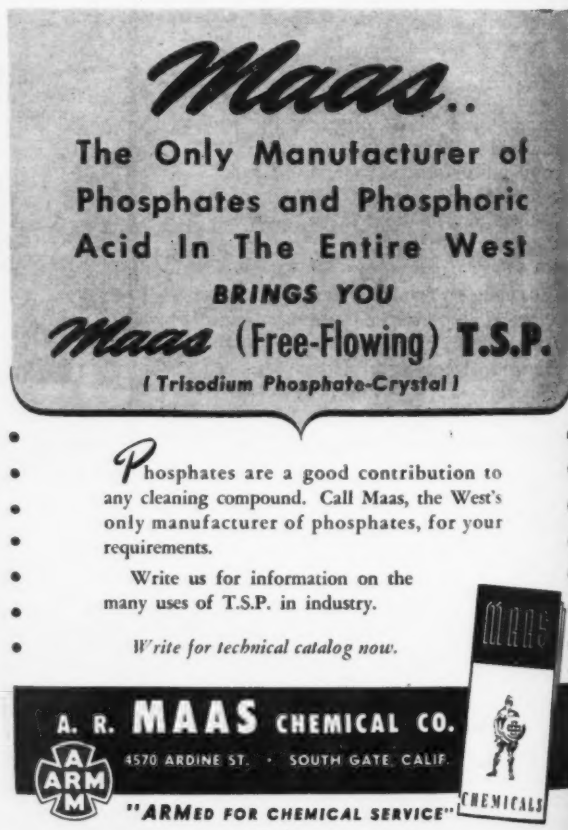
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ing on the payment of unemployment insurance taxes by employers.

In the case of the Knox Water Company of San Diego the court ruled that the company did not have to pay the tax on compensation paid to employees who leased their routes from the company. Such employees were held to be independent contractors.

But in the case of the Twentieth Century Lites Company of Los Angeles its salesmen were adjudged to be, not independent contractors, but regular employees with the result that the company was ordered to pay unemployment insurance taxes for them.

In a third case, that of workers at claims of the Empire Star Mines Company, Ltd., in its North Star Mine at Grass Valley, California, the court ruled that the workers were independent contractors and the company was held not liable for payment of the tax.

CIO Wins Second Refinery Election

While the recent victory of the CIO Oil Workers Union in an election at the Standard Oil Company's refinery in Richmond indicates that CIO strength in California is on the increase, some aspects of the election reveal that the union's progress is not as great as it would have believed.

Unlike the election at the same plant in October 1944 when the CIO was defeated, this recent election excluded from the polls all motor transport workers plus those of the California Research Corporation which is immediately adjacent to the refinery.

Had these two groups of workers been allowed to participate in the election, as before, there is good reason for thinking that the outcome would have been the same as formerly.

In any event, the fact that the CIO has won its second refinery election in the state—that at El Segundo last September was the first—shows increasing strength for the CIO in its struggle against the AFL.

Those voting in the election had their pick of the following four choices: the CIO-OWIU, the AFL Operating Engineers, the Independent Union of Petroleum Workers and "no union."

Labor Study

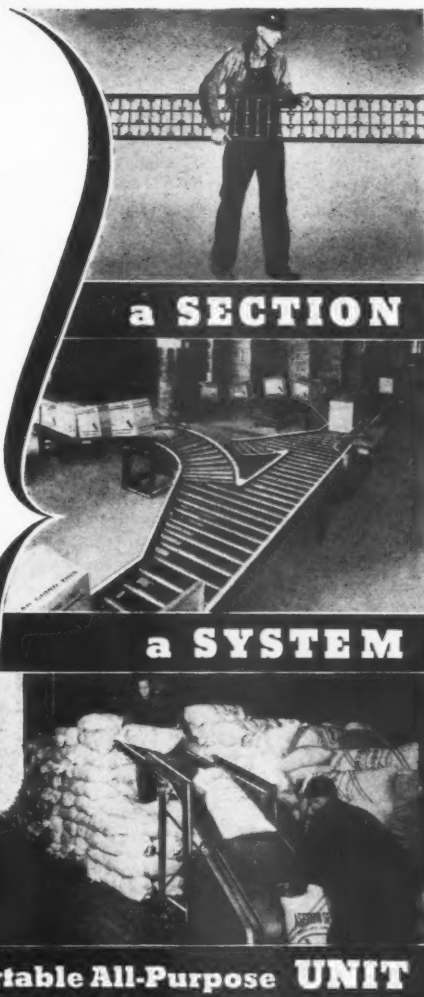
Dr. Vernon H. Jensen, economics professor at the University of Colorado, has been awarded a \$1,000 grant-in-aid to make a study of labor relations in the non-ferrous metals mining industry.

The award was made by the Social Science Research Council of New York.

Nylon Fuel Cells

Use of light-weight nylon bladder-type fuel cells has enabled the Boeing Stratocruiser to carry the equivalent of seven extra passengers, or 1,500 more pounds than by using the rubber type cells such as were found in the B-29 Superfortresses.

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Machinist Strike Decision Reversed by Referee

Some 550 members of the ILWU Warehousemen's Union have recently been granted unemployment insurance benefits for their period of unemployment during the machinists' strike that lasted through the winter months.

The decision to allow the warehousemen to receive unemployment benefits was made by referees at hearings in which a decision of the Department of Employment not to allow such benefits had been appealed.

As reasons for their decisions, referees

stated that "facts disclosed that employment of claimants was terminated involuntarily because of lack of further work."

In the decision of Referee Lloyd C. White it was stated as fact that the employer had caused operating supplies to be exhausted, had shut down steam and had closed down machinery during the week before the strike started on October 29.

In addition to that, it was also said as fact that the employer had posted notices throughout the plant in the week before the strike to the effect that no steam would be available after 8 o'clock in the morning of October 29.

Kiln Drying For Redwood Slated

As a major step in an extensive program of research into the science of drying California redwood lumber, an experimental dry kiln will soon be constructed at Eureka by the California Redwood Association.

During the balance of the year experimental dry kiln runs will be made by the Seasoning Committee of the Association which is seeking to develop new methods of drying redwood that will be of commercial value.

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Electronics to Upset Food Drying Techniques

New applications of electronics in the food processing industry hold the possibility of making obsolete present methods of drying fruits and other foods. V. C. Giordano, president of the Clara Val Packing Company of Morgan Hill, California, which is already operating a pilot plant using the electronic process, claims the following chief advantages for the new process:

- (1) Speed-up of drying time from the average of 15 to 20 hours required for dehydration by traditional methods to a matter of minutes;
- (2) complete sterilization of packaged contents without any loss of native flavor, mineral or vitamin content;
- (3) lower costs—test runs show a cost per No. 2 can of \$0.000038 for sterilization;
- (4) ability to offer dried fruit for market that contains a higher moisture content than those at present.

Though the operations of the Clara Val Packing Company at its pilot plant mark the first time that electronic drying or sterilization has been tried commercially for food processing, extensive experiments were carried on in laboratories during the war.

Because electronic sterilization takes place after the foods have been packaged, sealed and made ready for market the danger of contamination between packing and sealing time is eliminated.

Application of heat by electronics takes place throughout the interior of the package simultaneously, compared with the often incomplete sterilization of present methods. Owing to an outer shell that is impenetrable to the 212 degree heat of boiling water, many organisms can be killed only by the heat set up internally through electronic action.

"Registered California" Program Launched

A national publicity and exploitation program for use of a "Registered California" seal on products of the state's giftware and allied industries has been launched by the Registered California, Incorporated, a non-profit organization.

Use of the seal is expected to protect both retailers and consumers when selecting California-made wares.

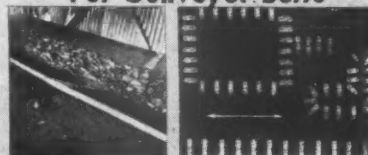
New Plywood Area

Ascertaining the possibilities of establishing a veneer and plywood industry in the northern Rocky Mountain area will be one of the duties of Lincoln A. Mueller, formerly a plywood and veneer specialist at the Forest Products Laboratory at Madison, Wisconsin. He has been assigned as forester in the recently created forest utilization service at the Northern Rocky Mountain Forest and Range Experiment Station at Missoula, Montana.

Present Day Practice in Belt Fastening

Every man who has anything to do with the purchase, application or maintenance of conveyor, transmission or V-belts will find the bulletins listed below of considerable value in connection with belt fastening work. A knowledge of present day practice in belt fastening helps reduce the loss in machine hours due to belt failures caused by the use of the wrong type of fastener or improper application. We shall be glad to send any or all of them to you or to any of the men in your organization.

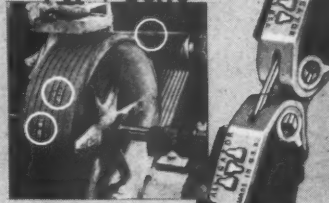
For Conveyor Belts



FLEXCO HD Belt Fasteners are used to make a "water-tight" butt joint in conveyor belts ranging from 1/4" to 1 1/2" thick and of any width. The view on the right shows the various types of rips and patches that can be made with these fasteners and Flexco HD Rip Plates.

Bulletin F-100 gives complete details on how to fasten and repair conveyor belts.

For V-Belts



ALLIGATOR V-Belt Fasteners are now being widely used to fasten B, C and D, open-end V-belt of cross woven fabric core construction now being made by most belt-making manufacturers. The view at the left shows a typical application of these fasteners to a drive where endless V-belts would require dismantling the machinery to put the belts on the sheaves.

Bulletin V-205 gives complete instructions on how to use V-belt fasteners.

FLEX V Fasteners for A and B belts are also available for lighter duty V-belt drives. Ask for Bulletin V-14.

For Transmission Belts



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ALLIGATOR Steel Belt Lacing is in worldwide use to make smooth, flexible joints in leather, rubber, balata, stitched canvas or solid woven belts up to 3/8" thick and as wide as they come.

Bulletin A-60 tells how to fasten and repair transmission belts.

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THE WESTERN OUTLOOK...NEWS...STATISTICS

THE PICTURE

Latest developments in the statistical picture of the West, compared to the month formerly reported, include the following:

Employment, April, up slightly
Warehouse space occupied, March, up slightly
Metal products shipments, Feb., down slightly
Lumber output, April, down slightly
Iron, steel, Mar., up sharply
Copper, Mar., down
Oil deliveries, Feb., up
Electric energy, Feb., up slightly

Employment

Partial stabilization of the labor scene in the West resulted in employment increases during the latter part of March and early April. In California 30,000 workers were added to factory payrolls, according to the California Department of Industrial Relations, Division of Labor Statistics and Research.

Increases in the ranks of non-durable goods workers were especially noticeable, in part due to seasonal increases.

In all manufacturing industries combined, hourly earnings of factory workers averaged \$1.25 in March. Average weekly earnings likewise rose with the average weekly wage in California during March amounting to \$49.21, a gain of 54c over the weekly earnings average in the preceding month. This offers a sharp con-

trast with the December 1944 peak of \$57.60 as a weekly wage.

EMPLOYMENT—DURABLE GOODS INDUSTRIES
(Figures from Calif. Div. of Labor Statistics)

	San Francisco Bay Area	Los Angeles Indust'l Area	Total State
October 1945	72,100	135,900	208,000
November	55,800	134,700	190,500
December	34,100	138,700	172,800
January 1946	36,100	138,800	174,900
February	33,700	127,800	161,500
March	34,400	132,200	166,600

Unemployment—Claims

Weekly Average Total Compensation Claims by States, according to reports of the United States Employment Service, Department of Labor:

	Arizona	So. Calif.	No. Calif.
April 1946	12,865	213,750	158,505
	Nevada 2,571	Oregon 53,864	Washington 80,087

Employment—Eleven Western States

Estimated Number of Employees in Non-Agricultural Establishments—In Thousands—Source: U. S. Bureau of Labor Statistics

	Montana	Idaho	Wyoming	Colorado	New Mexico	Arizona	Utah	Nevada	Total Mountain	Washington	Oregon	California	Total Pacific
July, 1945	109	93.6	63.9	263	82.9	107.4	144	42.7	907	616	343	2,414	3,371
August	110	92.9	64.7	263	83.1	106.2	144	43.3	907	612	343	2,410	3,371
September	111	96.0	64.7	260	82.9	99.2	139	43.8	897	577	320	2,285	3,182
October	108	94.6	65.7	260	82.4	97.8	136	42.9	888	526	297	2,231	3,054
November	109	95.4	66.4	261	83.1	99.2	136	42.3	892	519	287	2,174	2,980
December	112	96.5	72.4	266	84.3	100.2	136	42.4	910	525	282	2,120	3,007
January 1946	109	95.5	68.9	255	82.8	99.5	130	40.6	881	512	290	2,181	2,985

	Montana	Idaho	Wyoming	Colorado	New Mexico	Arizona	Utah	Nevada	Total Mountain	Washington	Oregon	California	Total Pacific
July, 1945	11.9	15.4	4.4	48.4	4.9	17.0	25.1	1.5	129	233	137.9	719	1,090
August	12.4	14.2	4.4	48.0	5.2	16.1	24.9	1.5	127	224	135.1	720	1,079
September	11.6	15.6	4.2	41.3	5.1	8.9	20.7	1.5	109	186	109.7	583	884
October	10.7	15.1	4.7	43.9	5.3	7.5	19.9	1.5	109	147	86.0	539	772
November	10.5	14.8	5.1	44.5	5.7	8.1	18.6	1.3	109	141	77.7	574	755
December	10.5	13.2	4.6	44.0	6.1	7.6	17.2	1.3	105	137	76.8	567	721
January 1946	9.6	17.1	5.3	47.6	8.1	6.8	15.2	1.3	111	136	76.0	567	779

Warehousing—Percentage of Space Occupied

Figures are based on reports from 634 warehousing firms and are made available by the Bureau of the Census, Dept. of Commerce.

	Mountain and Pacific Division	Idaho	Wyoming	Montana, Nevada and New Mexico	Colorado except Denver	Denver	Washington except Seattle	Seattle	Oregon except Portland	Portland	California except L.A. and S.F.	Los Angeles	San Francisco
October 1945	91.9	96.1	93.4	93.4	57.7	94.9	97.5	94.9	97.3	91.3	90.1	95.5	91.1
November	92.0	94.5	82.1	94.4	58.4	91.9	93.7	94.9	97.3	91.2	88.3	96.4	91.3
December	90.5	94.8	78.4	95.1	59.0	90.6	93.3	95.6	97.3	85.7	84.6	95.9	90.3
January 1946	89.9	95.9	76.1	95.9	59.5	88.3	90.7	96.2	97.3	85.1	80.8	94.9	92.0
February	90.3	95.5	76.5	91.4	77.3	87.8	91.9	97.1	97.3	91.6	80.9	93.7	91.3
March	91.3	88.2	81.3	94.4	70.7	89.0	94.0	96.9	97.3	90.2	80.5	95.6	92.8

Metal Products—Shipments

Value in thousands of dollars, according to figures furnished by the Bureau of the Census.

	Los Angeles County	San Diego County	CALIFORNIA S.F.—Oakland (Alameda, Contra Costa, Marin, S.F., San Joaquin, San Mateo, Santa Clara counties)	All other counties	Total California	COLORADO	OREGON	WASHINGTON Seattle (King, Kitsap, Pierce, Snohomish counties)	All other counties	Total Washington	GRAND TOTAL
October 1945	62,173	6,291	54,470	4,770	127,704	6,242	30,271	16,341	37,155	53,496	217,113
November	53,913	5,280	20,170	3,102	82,465	6,036	26,290	16,943	9,275	26,188	140,079
December	52,973	1,768	16,784	2,178	73,703	4,537	8,192	12,915	889	13,804	100,299
January 1946	43,621	2,029	16,627	2,214	64,491	6,062	7,247	15,402	7,829	23,231	101,011

Wholesalers' Sales

According to figures furnished by the Bureau of the Census.
(in thousands of dollars)

	Automotive Supplies	Drugs and Sundries	Dry Goods	Electrical Goods	Furniture & House Furnishings	Groceries & Food, except Farm Products	General Hardware	TOTAL
JANUARY 1946								
Mountain	500	....	....	855	....	3,846	839	....
Pacific	2,554	....	1,432	4,210	1,322	....	3,395	....
FEBRUARY								
Mountain	570	....	....	941	....	2,474	761	....
Pacific	1,391	....	763	4,018	1,150	5,913	1,723	....
MARCH								
Mountain	703	....	....	1,002	316	3,804	1,121	10,819
Pacific	1,712	....	1,548	4,413	1,275	9,842	1,028	35,591

Electric Energy—Produced in the West

Production of Electric Energy for Public Use—In thousands of Kilowatt Hours—Source: Federal Power Commission

	Montana	Idaho	Wyoming	Colorado	New Mexico	Arizona	Utah	Nevada	Total Mtn.	Washington	Oregon	California	Total Pacific
January 1946	214,953	103,386	18,062	99,255	42,252	248,064	29,240	247,675	898,099	745,231	304,091	1,032,828	2,062,139
February	189,753	91,733	19,945	86,169	42,985	250,759	29,953	239,069	850,366	688,234	299,660	1,108,091	2,075,065
March	189,574	100,496	21,460	89,860	42,389	261,007	38,820	229,264	972,870	732,218	304,277	1,333,106	2,069,583

FROM THE RESEARCH DIVISION OF WESTERN INDUSTRY

Freight—Western Traffic

Freight loadings for the five weeks of March rose substantially in the West and at the same time loads received from Eastern connections also went up appreciably.

Total traffic figures for all the major railroad carriers in the eleven Western States from July 1945 through March 1946 are:

	Loadings	Eastern connections	Total
July, 1945	960,556	388,440	1,348,996
August	695,277	450,497	1,145,774
September	595,143	310,868	906,011
October	617,023	313,964	930,987
November	535,620	278,746	814,366
December	586,302	302,807	887,009
Jan. 1946	469,139	240,906	710,045
February	467,054	243,725	710,779
March	594,106	311,419	905,525

Oil—On the Coast

A rise of 30,000 barrels a day in deliveries in all petroleum products in February over the January figures for the Pacific Coast territory is reported by the U. S. Bureau of Mines.

Total amount delivered daily by the oil companies in the area, including all deliveries to the federal government, offshore shipments and transportation and other losses, was:

	All Products (1000's Bbls.)	1944	1945
April	954,000	1,148,000	
May	900,000	1,135,000	
June	969,000	1,085,000	
July	884,000	1,011,000	
August	883,000	1,010,000	
September	902,000	954,000	
October	945,000	897,000	
November	992,000	901,000	
December	1,093,969	969,000	
	1945	1946	
January	1,066,000	917,000	
February	1,124,000	947,000	

Coal—Production of Bituminous and Lignite

	Montana	Wyoming	Colorado	New Mexico	Utah	Washington	Other	Total
November	364,000	870,000	557,000	112,000	531,000	124,000	1,000	2,559,000
December	499,000	1,037,000	752,000	146,000	632,000	77,000	1,000	3,143,000
January 1946	425,000	980,000	782,000	130,000	630,000	120,000	1,000	3,068,000
February	380,000	830,000	682,000	106,000	590,000	110,000	1,000	2,679,000

Flour Production—In Western Mills

According to figures furnished by the Bureau of the Census.														
(bushels reported)														
	WASHINGTON			OREGON			CALIFORNIA			COLORADO			MONTANA	
	Mills Report'g	Wheat Ground		Mills Report'g	Wheat Ground		Mills Report'g	Wheat Ground		Mills Report'g	Wheat Ground		Mills Report'g	Wheat Ground
September	16	2,397,880	16	1,315,306	10	909,779	18	805,434	16			16		
October	16	2,688,544	15	1,345,888	9	822,032	18	864,160	15			15		
January 1946	16	2,886,000	15	1,527,000	9	987,000	18	949,000	15			15		
February	16	1,206,000	15	1,561,000	9	948,000	18	973,000	15			15		

Cement—In Barrels

Production of cement during February was 72 per cent higher on the national average than it was in the same month a year ago according to the U.S. Bureau of Mines. Figures for first two months of '46 showed a 61 per cent gain in production and shipments.

	PRODUCTION (In thousands of barrels)	Colo.-Wyom. Mont.
	—California—	Oregon-Wash. Idaho
	1944	1945
June	1,180	1,439
July	1,312	1,538
Aug.	1,129	1,491
Sept.	1,360	1,364
Oct.	1,439	1,431
Nov.	1,182	1,211
Dec.	1,193	1,174
Jan. 1946	1,238	1,159
Feb.	1,191	1,355

Lumber—Cumulative

Reports on lumber production for the first 17 weeks of 1946, compared with the same period in previous years, and measured in thousands of board feet, are as follows, according to the West Coast Lumbermen's Association:

	17 Weeks 1944	17 Weeks 1945	17 Weeks 1946
Production (Pct. 1942-45 years of production)	2,762,554	2,426,392	1,950,228
Orders	3,006,257	2,583,781	1,934,842
Shipments	2,757,634	2,413,860	1,976,483

Western Pine Association figures covering Idaho White Pine, Ponderosa, Sugar Pine and associated species for 1946 through the week ending April 27, and compared with the same period for the preceding year, are as follows:

	1945	1946
Production	966,340	707,164
Orders	1,185,174	889,388
Shipments	1,110,567	868,587

Because of strikes in the Redwood lumber industry, only partial reports are available for February, says the California Redwood Association which states no report will be made for March. Partial figures for February are:

Production	800 M. feet
Shipments	2,000 M. feet

Production of Redwood lumber during January was as follows:

Soft Plywood—Output

	Moisture Resistant	Exterior	Total
June 1945	88,928	32,355	121,283
July	60,160	25,419	85,579
August	81,548	32,085	113,633
September	62,439	27,217	89,656
October	41,040	26,422	67,462
November	34,040	24,197	58,237
December	48,831	26,631	75,462
January '46	70,552	36,795	107,347
February	62,544	35,552	98,096
March	69,960	39,035	108,995

Iron and Steel

Pig iron and steel production for the Western area of the United States are reported by the American Iron and Steel Institute in net tons as follows:

	Current Month	Percent of capacity	Year to date	Percent of capacity
Pig Iron:				
June, 1945	141,334	60.6	948,039	67.4
July	141,317	58.8	1,089,356	66.1
August	135,740	56.3	1,225,096	64.9
September	104,190	44.8	1,329,286	62.7
October	105,708	43.9	1,434,994	60.7
November	86,986	37.3	1,521,980	58.6
December	120,498	50.1	1,642,478	57.9
Jan., 1946	83,979	34.9	83,979	34.9
February	40,363	18.6	124,342	27.1
March	107,605	44.7	231,947	33.2

	Current Month	Percent of capacity	Year to date	Percent of capacity
Alloy Steel*:				
June, 1945	4,016	-----	22,426	-----
July	5,688	-----	27,114	-----
August	1,331	-----	29,645	-----
September	4,517	-----	34,162	-----
October	3,966	-----	40,128	-----
November	9,078	-----	49,206	-----
December	4,398	-----	52,348	-----
Jan., 1946	4,463	-----	4,463	-----
February	4,909	-----	9,372	-----
March	6,026	-----	15,398	-----

	Current Month	Percent of capacity	Year to date	Percent of capacity
Carbon Ingots, Hot Topped*:				
June, 1945	21,144	-----	273,081	-----
July	9,073	-----	282,154	-----
August	8,204	-----	290,358	-----
September	3,625	-----	293,981	-----
October	8,442	-----	319,095	-----
November	6,049	-----	325,144	-----
December	8,379	-----	333,523	-----
Jan., 1946	3,170	-----	3,170	-----
February	4,317	-----	7,487	-----
March	4,287	-----	11,774	-----

	Current Month	Percent of capacity	Year to date	Percent of capacity
Steel Total:				
June, 1945	306,862	71.7	2,333,531	81.8
August	267,468	64.1	2,600,999	79.5
September	235,175	58.3	2,836,174	77.2
October	223,796	53.6	3,059,970	74.8
November	210,866	52.2	3,270,836	72.7
December	218,569	52.5	3,489,405	71.0
Jan., 1946	172,348	41.4	172,348	41.4
February	81,680	21.8	254,028	32.1
March	248,615	59.8	502,645	41.6

*Included in total steel.

Reports by United States Bureau of Mines—(Tons mined)

	Montana	Wyoming	Colorado	New Mexico	Utah	Washington	Other	Total
November	364,000	870,000	557,000	112,000	531,000	124,000	1,000	2,559,000
December	499,000	1,037,000	752,000	146,000	632,000	77,000	1,000	3,143,000
January 1946	425,000	980,000	782,000	130,000	630,000	120,000	1,000	3,068,000
February	380,000	830,000	682,000	106,000	590,000	110,000	1,000	2,679,000

According to figures furnished by the Bureau of the Census. (bushels reported)

CALIFORNIA			COLORADO			MONTANA			UTAH			IDAHO		
Wheat round	Mills Report'g	Wheat Ground	Mills Report'g	Wheat Ground	Mills Report'g	Wheat Ground	Mills Report'g	Wheat Ground	Mills Report'g	Wheat Ground	Mills Report'g	Wheat Ground		
15,306	10	909,779	18	805,434	16	697,256	23	635,587	15	423,639				
45,888	9	822,032	16	864,160	16	738,156	23	641,053	15	387,744				
27,000	9	987,000	18	949,000	15	823,000	23	685,000	15	452,000				
31,000	9	948,000	18	973,000	15	908,000	23	675,000	14	477,000				

Copper—Mined

Copper production dropped about 10% in daily average for Western mines in March because of the continuation of strikes at smelters and the outbreak of strikes at some of the large mines in Arizona late in March.

Nevada was the only state to show an increase over February greater than that called for by the increased number of working days.

	(Tons produced)			Total Western including other states
July, 1945	22,055	6,651	19,826	57,176
August	22,100	6,340	18,478	57,088
September	21,250	4,061	19,177	54,233
October	22,000	7,100	17,900	57,103
November	23,000	6,600	16,000	55,539
December	23,000	5,455	15,300	53,964
Jan. 1946	25,300	6,050	11,000	52,046
February	24,300	5,400	500	38,822
March	22,300	5,300	650	38,075

THE TREND

As if in line with a tendency of the government to relax price controls, such as was evidenced last month in the lifting of ceiling prices on a wide variety of commodities, business seemed to move forward a little here and there during the current month. It wasn't yet ready to move forward generally, but throughout the West warehousing space occupied crept gradually higher, indicating that business was preparing itself for the day when the labor situation would be clarified. The consistent rise in plywood output also indicated that the trend was definitely on the upturn.

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THE WEST ON ITS WAY

ARIZONA

EMERALD ISLE MINE TAKEN OVER—R. J. Payne, for many years manager of the Tennessee mine at Chloride, heads the new Chloride Mining Company which has leased holdings, mill and equipment of the Emerald Isle Copper Company—a large blanket of low-grade copper carbonate. Company plans expansion of operations.

SOUTHERN PACIFIC EXPANSION—A \$500,000 expansion of the Southern Pacific Company Phoenix yards, designed to increase capacity from 480 cars to 800, has started. Company plans expenditure of \$300,000 this year.

NEW CONSTRUCTION IN PHOENIX—Included in new construction at Phoenix are a three-story addition for the MST & T Company, Third Avenue and Adams, estimated at \$100,000; construction of drive-in and shops at Central and Merrill for Horace Comer, costing \$100,000; and a market center at Camelback and Central for Wasson and Makaus, costing \$100,000.

UTAH COMPANY TAKES OVER MILL—The Coconino Lumber Company mill in the Stoneman Lake area near Flagstaff has been leased by the Utah Construction Company which will use it to produce lumber for Davis Dam.

NEW BLAST SYSTEM IN USE—Bagdad Copper Company, Bagdad, is supplanting underground operations at its property by surface mining, and is using a new blasting technique. The change makes it possible to run the mill beyond its rated capacity of 2500 tons daily, and present volume is running from 78,000 to 80,000 tons every 30 days.

EXPANSION OF MILLING PLANT—Phelps Dodge Corporation, Bisbee, plans expansion of its milling plant which will increase daily capacity from present 400 tons to daily average of 1,000 tons. Improvement will facilitate the milling of the 1,000 tons of ore mined daily at Copper Queen which previously were divided between the Bisbee mill and custom mills.

CALIFORNIA

COOPER STEEL IN NEW LOCATION—The J. T. Cooper Steel Company has expanded operations and is now in its new plant at 4800 Corona Avenue, Los Angeles, in the central manufacturing district. Company produces strip steel in gauges of .001 to .187 and hopes to be able to double production in new quarters. Company supplies markets in Mexico, South America and the Philippines.

BOBBI-KAR TO CATER TO FOREIGN MARKET—Plants to assemble the Bobbi-Kar, a light-weight car which will enter the automotive field soon, will be set up at Monterey, Mex., Hong Kong, China, and Bombay, India. The company has already purchased a section of the Consolidated-Vultee Aircraft Corp. plant at San Diego for \$1,600,000. Included were land and buildings No. 2 and No. 4. Company plans employment of 10,000 persons.

NEW FROZEN FOODS PLANT—Beaumont Frozen Foods & Storage Company has started operations at Beaumont, Calif., with Floyd C. Hood in charge of operations. Company is working on a 3,000,000-pound boneless beef contract and hopes to process and freeze a million-pound cherry pack in June. Company will also pack boysenberries, apricots and peaches.

AMERICAN ANODE PLANS WESTERN VENTURE—A manufacturing and processing plant will be constructed by American Anode, Inc., of Akron, Ohio, in Los Angeles, which it is expected will be in operation late this year. Company will manufacture latex compounds.

NEW AIRLINE SERVICE—The Santa Fe Railway Company has organized the Santa Fe Skyway, Inc., as an affiliated company for the purpose of engaging in contract air transportation. The company will offer specialized contract air service in the general territory served by the Santa Fe.

CAST ALUMINUM WARE—Triple A Metalcraft Corporation, 3421 East 22nd Street, Los Angeles, has begun manufacture of quality cast aluminum cooking ware in its plant acquired from the A & F Aluminum Products Company. C. J. Amick is pres., R. M. Allan, v.p. and E. D. Amick, sec.-treas. Company plans a new line of quality cast aluminum cooking ware.

SQUARE D PLANT—A new West Coast Division plant of the Square D Company will be built to manufacture and assemble electrical control and distribution equipment. The site, near Southern Pacific Railroad facilities, faces on Valley Boulevard, Los Angeles. Construction will be completed as soon as building materials are available. Joseph H. Pengilly, v.p. of the company, is general manager of the West Coast division.

SIXTEEN MILLION FOR POWER—Southern California Edison Company has applied to the California Railroad Commission for permission to build a new steam-electric power generator plant at Redondo Beach, Calif. Plant will cost \$15,800,000. It will have initial capacity of 120,000 kilowatts.

RYAN LOOKS TO THE FUTURE—Ryan Aeronautical Company is investing more than a half million dollars in equipment which is being acquired from the Defense Plant Company. Company has surveyed equipment loaned during the war and is acquiring that which can best be used by the company. Ryan has contracts totaling more than \$2,500,000 in new exhaust manifold installations.

HEINZ OPENS NEW PLANT AT TRACY—H. J. Heinz Company has opened its new food processing plant at Tracy. Occupying a 73-acre site, the plant is of brick, steel and concrete structure. Employees will number 900 this summer and eventually some 1,500. Company will have a large schedule of baby food production as well as process tomatoes.

COMPANIES MERGE—The Patterson-Ballagh Corporation, in which the Byron Jackson Company has owned a minority interest, has been merged with it and will hereafter operate as a separate division of the latter firm. Though both corporations manufacture oil industry equipment, their products in general are non-competitive.

LITTLE GIANT MANUFACTURING PLANT—Ground has been broken for the new washing machine manufacturing plant at Hayward for the Little Giant, Inc. Company is utilizing multiple Quonset huts, which do not employ critical materials.

GOLD IN THEM TH'AR HILLS—An extensive gold production program is being inaugurated by C. L. Best, San Leandro, owner of the Ruby, Gold Bluff and Oxford mines. Company has installed a new machine, said to be the first one of its type to be used in the West—a Sullivan T350 dual-valve drifter mounted on a hydro-drill jib. Plans are being made to reconvert the Oxford ball mill from 50 tons to 100 tons daily production.

CASE-SWAYNE TAKES OVER COMPAK FOODS PLANT—Case-Swayne Co., Santa Ana, has purchased the former plant of Compak Foods, Inc., according to RFC announcement.

DAINTY PACK FROZEN FOODS BEGINS CONSTRUCTION—Construction of the first \$500,000 unit of a million dollar quick-freezing operation for Dainty Pack Frozen Foods has begun at Modesto. Stanley F. Triplett (Pacific Grape Products Co.) heads new concern which will freeze in tin. Concern packed 10,000 cases last year on test basis.

PLACER MINING OPERATIONS EXPANDING—Klamath and Salmon River areas near Yreka are the locations for expanding placer mining operations. A. G. Crawford is installing a dragline dredge on placers below Sawyer's Bar in the Salmon River field. Dredging is expected to start in April. Midland Mining Co. is working placers near Sawyer's Bar with a suction dredge; the old Joubert hydraulic mine has been placed on production.

INDUSTRIAL BUILDING—California Wool Growers Assn., 595 Mission Street, San Francisco, has awarded contract for construction of \$50,000 reinforced concrete industrial building.

MILO COFFEE COMPANY PLANT—Milo Coffee Company, Harrison near Fourth, San Francisco, plans erection of a new \$50,000 plant.

WINERY—Liberty Winery, Lodi, has started construction of its new \$375,000, 15,000 ton capacity winery.

SPRECKELS SUGAR COMPANY EXPANSION—Modernization is planned at the Manteca plant of the Spreckels Sugar Company which is to be reopened.

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THE WEST ON ITS WAY

HUGHES TOOL COMPANY BUYS PLANT—The aircraft plant at Culver City, Calif., which the Hughes Tool Company has been operating with the Kaiser-Hughes Company, has been purchased by the Hughes concern, which plans to use the plant for the manufacture of airplanes. Actual cost of the plant was \$1,948,497. Hughes bought it for \$856,000.

SCHUMACHER & PARAFFINE MERGE—Stockholders of both the Schumacher Wall Board Co. and Paraffine Companies, Inc., have approved the proposed merger of the two companies.

WOOLDRIDGE EXPANSION—Construction of three new units to include machine shop 400 x 60 ft. and tool sheds 235 x 50 ft. all of reinforced concrete construction is under way by the Wooldridge Mfg. Co., Hendy Avenue, Sunnyvale. Cost is estimated at \$400,000.

QUICK-FREEZE PLANT—Karl H. Koch, 25 Court Street, Woodland, plans immediate construction of a one-story concrete quick-freeze plant to cover five acres, and freezing warehouse. Ground will be broken the last of April and completion is expected by Sept. 1. Costs include \$200,000 for building and \$150,000 for equipment.

NATIONAL OIL PRODUCTS BUILDING—Construction of masonry mfg. and office building has begun for National Oil Products Company, 1141 South Fourteenth Street, Richmond. Building will cost \$60,000.

AERO-CRAFTS CHANGES NAME—Aero-Crafts Corporation has changed its name to Technical Crafts Corporation. Headquarters will remain in Los Angeles. Company operates Aero Industries Technical Institute, American School of Aircraft Instruments and the American School of Watchmaking, and plans expansion in operations soon.

JOHNS-MANVILLE EXPANSION—The contract has been awarded for the \$400,000 factory addition to the Johns-Manville Products Corp. building at Miguierito Canyon, Lompoc. Extensions to present buildings, a steel frame and transite exterior warehouse building, and wood frame wash and locker room buildings are included in plans.

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MINERAL ORE TESTING PLANT READY—The pilot plant for testing mineral ores at Shasta Dam has begun operations. The plant on the Sacramento River near Redding provides facilities for testing ore deposits of northern California and adjacent areas to determine their value in production of high quality alloys by the process of electric arc furnace.

PACIFIC VINEGAR TO OPERATE PLANT—Pacific Vinegar Company, Inc., will conduct its operations on the westerly portion of property formerly owned by the Rheem Manufacturing Company at Richmond. The plant, which will employ a large number of workers, is expected to be in production by June.

MARLO PACKING CORPORATION BUILDS—Marlo Packing Corp., Phelps & Newhall Avenue, San Francisco, is building a new \$145,000 plant for expansion of food processing facilities.

TO MANUFACTURE ORE MILLS AND MINING EQUIPMENT—Allied Mining Machines, Inc., San Francisco, plans manufacture of ore mills and other mining equipment. Plant site is not yet located.

WORK BEGINS AT NATIONAL LEAD CO.—Work has begun on a new steel-frame building, 180 x 45 feet in size, planned for completion July 1, which will increase production 50 per cent, at the National Lead Company plant, 4701 San Leandro Street, Oakland. The building and equipment represents expenditure of \$200,000.

OWENS-ILLINOIS GLASS COMPANY ADDITION—Extensive alterations and an addition to its plant at 601 - 36th Avenue, Oakland, is planned by the Owens-Illinois Glass Company. Operations of the plant will be facilitated.

NEW COOLING DEPARTMENT—Holly Meat Packing Company, 2736 Magnolia Street, Oakland, plans installation of a new cooling department in its \$75,000 addition. The structure will be of reinforced concrete with steel trusses, 158 x 70 feet in size.

BORDEN DAIRY ADDITION—A three-story addition to the plant of Borden's Dairy Delivery, 2743 San Pablo Avenue, Oakland, has begun. Additional space and equipment for increasing production, particularly of ice cream, will be undertaken in the \$200,000 expansion.

FORMER AMSHIP YARD TAKEN OVER—The former Amship Corporation shipyard at the foot of Paru Street, Alameda, will be reopened late in April by the Island City Ship Repair Co., Inc., a new corporation which already has submitted bids for Navy and War Shipping Administration repair contracts. The yard will be equipped to handle various types of repair jobs. Some 100 workers will be employed. R. W. Reade, Berkeley shipyard contractor, is president; E. B. McDonald of Danville, former gen. mgr. of the Graham ship repair plant in Oakland, will be gen. mgr. of the Alameda yard; Ralph Hyer of Alameda will be production supt. The company has leased the yard from the Alaska Packers Association.

RECONVERSION CONTRACTS—Moore Dry Dock Company, Oakland, has been awarded contracts for reconversion of troop ships General M. C. Meigs and General W. H. Gordon. The yard's bid was \$454,382 for the two vessels which will be turned over to the American President Lines for private operation.

FACTORY CONSTRUCTION—Hydro Aire Company plans construction of a factory building at 3000 W. Winona Street, Burbank, which will cover an area 100 x 100 feet, contain structural steel work, reinforced brick work, corrugated iron roof, steel sash, cement floor.

CALIFORNIA ELECTRIC POWER COMPANY EXPANSION—Some \$2,000,000 for new facilities to meet new demands for electric energy will be expended by the California Electric Power Company. The program includes extension of the corporation's ice plant at El Centro, Calif. Many new power lines will be built to supply rural districts.

INTERNATIONAL HARVESTER CHOOSES EMERYVILLE—The motor truck division of International Harvester Company has acquired a factory site at Emeryville where it will go into production on its new heavy-duty "West Coast" trucks.

HENDY COMPANY PURCHASES IRON WORKS—Joshua Hendy Iron Works, Sunnyvale, has offered to buy the government-owned war-built facilities (subj. to approval of WAA) for \$565,500 cash and payment of a \$2,925,000 mortgage. Facilities cost the Government \$5,571,171.

KRAFTILE COMPANY EXPANDS—To accommodate the increased activities of its stepped-up postwar program, office space is being doubled at the Niles headquarters of the Kraftile Company.

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THE WEST ON ITS WAY

COLORADO

CRIPPLE CREEK ORE BEING SAMPLED—A large experimental sampling project is under way on Globe and Iron hills in the Cripple Creek district to determine whether new, large scale milling operations in the district would be profitable. A sampling plant has been completed on the site of the old Cripple Creek mill.

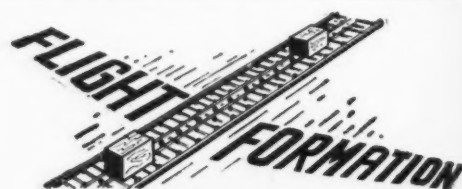
WESTERN AIR LINES MOVES TO DENVER—WAL's Inland division maintenance and operations base will be moved from Cheyenne to Denver. The move is occasioned by the recent opening of the Los Angeles-Denver route. About 130 employees will be affected by the move, with dispatchers, flight crew members, maintenance department personnel and purchasing department workers included.

REA PLANNING POWER STATIONS—Colorado REA's are preparing to launch a \$9,000,000 expansion program by which co-operatives would enter the power generating field. Feasibility of erection of a \$750,000 plant between Limon and La Junta to supply power for four existing and proposed co-operatives at Burlington, Yuma, La Junta and Limon. Plant would operate on either natural gas or soft coal. REA plans purchase of the municipal plant at Meeker which it will expand, and convert from water to natural gas, to supply power for the Rangely area.

IDAHO

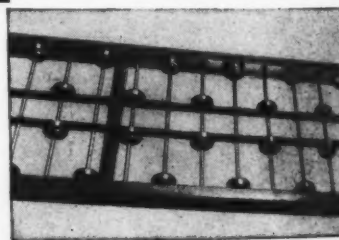
ALUMINA CLAY DEPOSIT—Officials of U. S. Geological Survey revealed the discovery of a big deposit of high grade alumina clay, near Moscow, believed to contain a 30-year supply of ore. Ore is said to contain a high percentage of titanium oxide used in making high quality white paints and other by-products. The deposit, known as "Excelsior Deposit," is almost in the back yard of Henry J. Kaiser's Spokane, Wash., aluminum plants.

GEM STATE INDUSTRIES BEGINS OPERATION—Processing of calcium to be marketed as a supplement for livestock feed has begun in Boise by Gem State Industries, Inc. T. F. Donahue is general manager. W. C. Shearer is president. Calcium will be marketed in 25, 50 and 100-pound bags. Company now employs five workers but plans hiring from 50 to 100 persons if successful.



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GOLD CROWN MINING COMPANY FORMED—J. D. Chapin, T. H. Ellison and James A. Wayne, all of Wallace, have incorporated the Gold Crown Mining Company of Wallace, listing capital stock at \$200,000.

MONTANA

BIG MILL AT POLSON—Construction will be started this spring on two units of the Idaho-Montana Pulp & Paper Co. mill which it is planned will cost \$3,000,000, and will eventually produce lumber, plywood, pulp and paper. Pulp and paper facilities will be added later. A 65-acre site on the Flathead river between Polson and Kerr dam has been purchased by the company.

SOME BIRDS—Beatrice Creamery Company, Great Falls, has purchased property at Fourth Avenue South and Fourth Street, Great Falls, which it will remodel to accommodate the latest equipment for dressing, packing and shipping turkeys. Plant will be ready to handle the fall crop and will be equipped to slaughter, machine-pick, cool and pack 2,000 birds a day.

PULPWOOD PLANT EXPANDS—Gibbs & McGillis of Milwaukee, Wis., have started work on the site of their pole and pulpwood drying and peeling plant at White Sulphur Springs, Montana. A treating plant will be added as soon as the project gets under way. A crew of 50 men will be employed.

NEW MONTANA FIRMS—Granite Timber Company of Philipsburg incorporated for \$75,000 by Harold B. Kaiser, John D. Kennedy and B. G. Paige, all of Philipsburg; and Concrete Blocks, Inc., formed to manufacture and sell cement, concrete products, cinder blocks, concrete pipes and posts, cinders, plaster and other types of products, incorporated for \$50,000 by E. A. Derrer, M. J. Mongrain and Edward N. Davis.

NEVADA

TO RECOVER MERCURY—Basic Metals, Inc., Los Angeles, has started construction of a 100-ton plant in the Columbus marsh 46 miles from Tonopah which will be used for commercial recovery of mercury values from material obtained from the marsh and mixed with water to a semi-liquid consistency.

DAVIDSON SILVER-GOLD-LEAD MINE TO OPEN—Early production of silver-gold-lead ore is planned from the Davidson property at Mountain City by Knowles Bros. of Elko, who have taken a long-term lease and option on the property.

BUENA VISTA MINE TO REOPEN—Don Burgner, Reno mine operator, has purchased the mine and cyanide mill on the Buena Vista gold property three miles east of Midas in the Gold Circle district. Some 50 tons of ore can be treated daily.

FLOTATION MILL FOR SILVER PALACE—Construction of a flotation mill has been nearly completed at the old Silver Palace property near Grantsville, 10 miles south of Ione. The mine is controlled and operated by Associated Mines Corp. of Southern California. One of the main shafts has been dewatered and repaired to the 200-foot level, and management is reported to be planning production this month.

PANSY LEE EQUIPPED—Equipped with a new Diesel power plant and compressor, the Pansy Lee gold property in the Barrett Springs district is being prepared for large scale operation by Kia Ore Mining Co. It was leased by Kia Ore Mining from West Coast Mines of California a few months ago. Early installation of a plant using the sink-float method is reported to be planned. Mine already has a flotation mill with capacity of 150 tons.

MILL CREEK COPPER COMPANY EXPANDING OPERATIONS—Expansion of facilities of the Mill Creek Copper Company of Idaho at Mountain City, Nev., are underway. A double compartment shaft has been sunk to 600 feet, with more than 1,000 feet of crosscutting completed. Company plans installation of a Diesel engine to generate electricity, and a diamond drill for exploration work. New buildings have been erected on the site, located near railroad trackage.

BELL TELEPHONE TO ENLARGE RENO FACILITIES—To restore equipment margins depleted by the war years, Bell Telephone Company plans expenditure of \$110,000 in Reno this year.

WASHING PLANT PROVIDED FOR LANDER PLACER—A new placer mining company, the Hi-Bar, with Blaine Hoalst and Floyd W. Jones as partners, will begin operations in Iron canyon, south of Battle Mountain, shortly, using a portable washing plant with an estimated capacity of 350 yards each eight hours. Gravel will be delivered to plant by "cats" and carryalls.

NORTH STAR-LAURA MINE EQUIPPED—An electric hoist, ball mill, rock crusher, pump and other units are being installed at the North Star-Laura group of patented lode gold claims near Tuolumne. The North Star shaft has been reconditioned from surface to water level and drifts are to be reopened on the 100, 200 and 300-foot levels. Transierra Gold Mining Co., which owns and operates the mine, plans to mill 25 tons of ore daily when the property is ready for production.

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THE WEST ON ITS WAY

NEW MEXICO

POTASH COMPANY EXPANDING INTERESTS—Extension of oil activities by the Potash Company of America has begun in Eddy County, New Mexico, where the concern has taken a lease on 21,000 acres of potential oil land in the Rocky Arroyo unit, for a "wildcat" oil venture. The largest producer and refiner of potash in the nation, with mines and refinery at Carlsbad, it has been diversifying its activities for several years, going in heavily for the building up of oil reserves.

NEW FIRMS CHARTERED AT SANTA FE INCLUDE: Hobbs Brick and Tile, Hobbs, incorporated by F. F. Myers, Theodore Johnson, Randall Thompson, A. M. Bartlett and Ralph Hendrickson; and Starr Canning Company, Hatch, incorporated by E. Arthur Starr, H. C. Ferris and James A. Dick, Jr.

LUMBER COMPANY ORGANIZES—Big Joe Lumber Co. of Roswell has been chartered by the New Mexico State Corporation Commission. Incorporators are: John Devlin, Roswell, agent; E. N. McGregor, H. N. Roberts and B. L. Surtess, all of Wichita, Kas.

OREGON

TO CAN BEANS AND PRUNES—Oregon Foods, Inc., McMinnville, a new Northwest operation, plans canning of around 600 tons Blue Lake beans and 1200 tons of prunes this season. C. C. Wright heads concern.

IRON FIREMAN BUILDINGS SOLD—Cornelius W. Meyers and Associates have purchased site and buildings comprised in the old Iron Fireman Manufacturing Company's west side marine engine plant, S.W. Front Street, Montgomery Street and Harbor Drive, Portland. A portion of the site and buildings will be used in manufacture of equipment for logging and contracting industries.

ALCOA ACQUIRES ALASKA DEPOSIT—The Alaska Spruce Log Program has sold buildings and equipment at Camp Three on the west side of Edna Bay, Koscusko Island, to the Alcoa Mining Company. Company will use the limestone in processing the laterite found in recent surveys by the company in Oregon. Chief Geologist H. H. McQueen expects to have a crew on the job in mid-April.



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**CENTRALIZED SYSTEMS
OF LUBRICATION**

COLUMBIA RIVER PACKERS ASSN. SHIFTS—Nicholas Bez, Seattle, and Transamerica Corporation, San Francisco, have purchased stockholdings in Columbia River Packers Assn. from William L. Thompson and family. Thompson retains a seat on the board, and son E. W. Thompson continues as president. Bez succeeds to chairmanship.

JANTZEN KNITTING MILLS PLANS NEW BUILDING—Permit for construction of a \$200,000 building, second phase in a \$1,000,000 expansion program undertaken by the Jantzen Knitting Mills, is announced. The new building, 150 x 200 foot two-story structure of reinforced concrete with brick veneer, will match other Jantzen buildings in the area and will be erected at 540 N.E. 19th Avenue. It will be an extension of Jantzen's spinning and dyeing building. The third building planned is a 330 x 200-foot one-story sewing building, planned as soon as possible. The first building, a 100 x 200 one-story building, has been completed. The expansion will double the plant's capacity.

NEW ELEVATOR PLANNED—Igleheart Brothers, Inc., a unit of General Foods Corp., has started construction on an 800,000-bushel modern grain elevator at Pendleton, Ore. Elevator is scheduled to be completed by July 1. It will be built adjacent to the Igleheart milling plant and will increase by 20 times present elevator facilities.

CONSTRUCTION APPROVED—Canada Dry Ginger Ale, Inc., plans a \$405,000 plant on the N.E. corner of N.E. 44th Avenue and Halsey Street, Portland; Albany Ice and Cold Storage, Inc., Albany, \$179,000 plant; Cascades Plywood Corp., factory and salvage-type sawmill and battery separator plant at Lebanon, \$375,000; Paulus Bros. Packing Company, cannery at Salem, \$750,000; Smithwick Concrete Products Company, concrete block plant, 1750 N.E. Lombard Place, Portland, \$90,000; Spencer Packing Company, packing plant, N.W. 26th Avenue and Industrial Street, \$433,000; Vaughn Motor Company, manufacturing and assembly building, S.E. Raymond Street, between 24th and 25th avenues, \$90,000.

Other approvals are: A \$140,000 building at 5251 S.E. McLoughlin Blvd., Portland, for the Nelson Equipment Company; and an \$86,000 machinery repair and storage building at 1104 S.E. Taylor Street for Oregon Grange wholesalers.

SITE CHOSEN FOR NEW WILLAMETTE MILL—The new sawmill of the Willamette Pacific Lumber Company, having an annual capacity of 35,000,000 feet, will be erected four miles east of Sweet Home, at the town of Foster. Plans call for construction of a 50-acre log pond. Company is headed by W. W. Clark, George T. Gerlinger, William Swindells and Maurie Clark.

SEATTLE FIRM EXPANDING IN PORTLAND—Pacific Car & Foundry Co. expects to double its stock of parts for logging equipment and construction bulldozers as part of an expansion program that will entail erection of new Portland headquarters on the southwest corner of S.E. Eighth and Madison streets. Building will be 50 by 100 ft. concrete structure, with concrete floor and timber-trussed roof. It will contain display and stock rooms and offices.

LOS ANGELES OUTFIT WANTS OLYMPIA VENEER—Sale of Olympia Veneer Company, one of country's three largest producers of Douglas fir plywood, Lester & Co., Los Angeles investment firm, and Lehman Brothers, New York, is contemplated by the concerns which plan to reorganize the properties and sell stock to the public. Price is reputed to be between \$4,500,000 and \$9,000,000. The company, which has its main plant at Olympia, Wash., has these subsidiaries: Olympia Plywood Machinery Corp., Olympia; Eugene Plywood Co., Eugene, and Pacific Plywood Corp., Willamina.

UTAH

GILSONITE PLANT—A small gilsonite processing plant, employing between 20 and 25 persons, is expected to be constructed soon in Salt Lake City by the Ouray Producing and Refining Corporation. Company plans manufacture of asphalt, paint, varnish, lacquer, roofing materials, resinous compounds, etc., and will concentrate sale in the intermountain and western markets.

CEMENT PRODUCTS PLANT—A new and modern concrete production plant, costing an estimated \$50,000, will begin operations in Provo shortly. Utah Concrete Pipe Company plans construction of a plant which will manufacture concrete and lava building blocks and concrete pipe of all sizes and shapes at property acquired at 16th South on Springville Road.

THERMOID COMES WEST—Thermoid Company of Trenton, N.J., will construct an industrial rubber manufacturing plant, employing more than 300 workers at Nephi, Utah, 85 miles south of Salt Lake City, according to announcement by J. W. Beard, Los Angeles, representative of firm. A 24-acre factory site just north of Nephi has been purchased. Rubber or synthetic products and asbestos will be used as raw materials in the plant.

OIL IN EASTERN UTAH—Federal Bureau of Mines regards discovery of oil, fuel gas or helium in commercial quantities in the southeastern Utah desert as a possibility.



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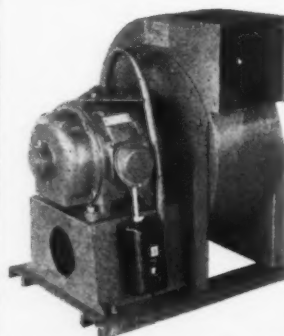
WASHINGTON

LINK-BELT EXPANDS AT SEATTLE—Nationally known manufacturers of transmission and conveying machinery, Link-Belt Company are building a new plant at Sixth Ave. South and Hinds St. in Seattle, to replace the company's present plant at 820 First Avenue South. The modern new plant will include a machine shop, larger warehouse facilities and up-to-date office building.

PROJECTS APPROVED AT SEATTLE—Northwest Airlines \$650,000 hangar at Bow Lake airport; Lewis Pacific Dairymen's Assn. two-story \$411,000 cheese processing plant at Chehalis, 80x240 ft. in size of reinforced concrete; Rickney & Gilbert Co. Yakima, a \$234,000 cold storage plant at Tieton, Yakima County, 124 by 248 feet in size, of reinforced concrete; a \$90,000, 60 by 360 ft. Seattle Auto Freight Depot, 2100 Alaskan Way, of concrete block construction, with concrete floor and wood roof and including offices on the mezzanine floor; a manufacturing plant costing \$150,000 for Schorn Paint Co.; a lumber plant for Savage Lumber & Manufacturing Co., costing \$75,000; Brewster Cooperative's apple storage and packing plant, costing \$65,000; Whatcom County Dairymen's Assn., Bellingham, a \$52,000, one-story, dairy products storage warehouse.

PREFABRICATED HOME COMPANIES PLANNED—Precor Corp. will begin operation within 90 days at Bellingham, and in Tacoma the Far West Sales & Engineering Co. will begin producing 25 houses a week within the next few months. It will sell homes for less than \$6,000. Precor is licensed under the Ford factory-built system which developed and patented new methods of prefabricating homes, and has leased the Bellingham Iron Works automotive building on Squaleum industrial fill for its plant.

WEYERHAEUSER TO BUILD SEVEN MILLION DOLLAR MILL—Construction of a \$7,300,000 Weyerhaeuser sulphite and pulp mill at Longview is planned. Construction of the mill should aid relief of the present paper shortage. The Seattle district office of the CPA has recommended approval of the project.



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SIMPSON LOGGING CO. PLANS MILLION DOLLAR PLANT—Construction of a \$941,000 wall board plant for the Simpson Logging Company at Shelton has been started. Plant will be 90 by 900 ft. in ground area, three stories high. Three-section structure will cost \$384,125 and contain equipment valued at \$556,976.

WORK BEGUN ON FORD PLANT—Work has commenced on the earthquake-proof million dollar Ford Motor Company parts depot near Fourth Avenue South and Diagonal Way, Seattle. Work will be completed by about October 1. Building is of concrete, brick and steel construction and will rest on Douglas fir pilings surmounted by steel shells filled with concrete. Structure will be 345 x 200 ft.

BIRDS EYE STRUCTURE NEARS COMPLETION—The \$400,000 freezing and processing plant for the Birds Eye-Snyder division of General Foods Company is nearing completion at Walla Walla. Structure includes a concrete foundation and floors and a trussed roof.

ROCK WOOL PLANT IN OPERATION—Independent Insulations, Inc., a Seattle company operating a new rock wool insulation plant at Tacoma, has contracted its entire output for the next two years to the Seattle firm of Van Waters & Rogers, Inc. The concern leased the war plant of the Pacific Carbide Company. It uses slag from the Tacoma smelter. Production has begun. Company expects to make some 80 tons a day, and contemplates further expansion of capacity. C. J. Rusden is pres. of new co., John B. Bridgeford, exec. director and gen. mgr., and T. C. Frerichs, plant engineer and supt.

REICHHOLD CHEMICALS INC. PLANS NORTHWEST PLANT—Somewhere in the Pacific Northwest will be located a resin plant for Reichhold Chemicals, Inc. The company will produce phenolic resins used in the plywood industry.

LOGGING FIRM PURCHASED—The Northwest Logging Co., operating in Olympic National Forest timber near Blyn, has sold all its equipment and contracts to R. S. Fox of Seattle.

SPOKANE CREAMERY EXPANSION PLANNED—Curlew Creamery Co. plans construction of a new plant at Second and Hatch, Spokane, at an expenditure of \$80,000. A one-story plant built of cement blocks and brick piers, containing 13,000 to 14,000 sq. ft. is planned. The enlarged Spokane plant will handle the freezing business for the company and act as distributor of company products.

POWER COMPANY PLANS BIG EXPANSION—Puget Sound Power & Light Co. will spend \$4,500,000 for construction this year. Improvements and additions to the transmission and distribution systems are planned.

TACOMA SLEEPMASTER PLANT PRODUCTION TO BEGIN—The Tacoma Sleepmaster Co., a furniture plant manufacturing upholstered davenports, chairs and divans, in the former Exposition Hall, 26th and Bay Streets, Tacoma, plans employment of some 200 persons.

SEATTLE FIRM PURCHASES PORT ANGELES COMPANY—The Carlsborg mill of the Crescent Logging Co. has been purchased by George W. Pankratz, Seattle, who operates as the Standard Lumber Co. Mill will be reopened shortly.

SALMON CANNERY CHANGES HANDS—Ted Holway, Roy Kemmer and Glenn Heckes, all of Oysterville, have purchased the P. J. McGowan & Sons' salmon cannery at Ilwaco.

LIBBY STRUCTURE TO BE STARTED—Construction will begin immediately on the Libby, McNeil & Libby quick-freeze building at Walla Walla. The structure will be 40 x 60 ft. in dimension and one story in height. It will be located adjacent to the loading porch of the company plant.

SEATTLE TO REAP HUGE PHONE EXPENDITURE—Pacific Telephone & Telegraph Company has announced an extensive construction program for Seattle, calling for expenditure of from five to seven million dollars. Included in the program is a \$180,000 fire-proof addition to the East-Capitol-Prospect central office at 17th and East Pike sts.

WYOMING

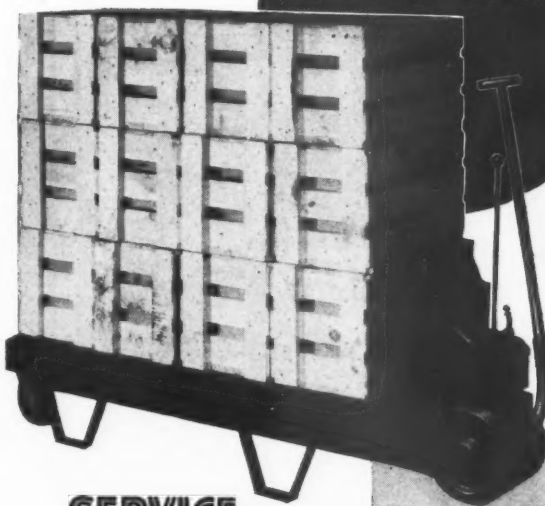
SUMMIT AIRWAYS CHOSE LARAMIE—The Summit Airways Company which will operate feeder airline service in the Rocky Mountain region will maintain headquarters, operations base and maintenance shops in Laramie. It will also operate its airplane sales and service and flight and ground school instruction at Laramie.

PROFITABLE OIL FOUND IN WESTERN WYOMING—A recent report of the Geological Survey, on the Sage Creek dome area in Western Wyoming reveals that it is considered as a productive area for commercial accumulations of oil, and deep strata also offer good possibilities for oil on some parts of the dome.

NATURAL GAS SOURCE FOUND IN SPRINGS AREA—Initial tests of a 12,997-foot well 55 miles west of Rock Springs indicate the most important Rocky Mountain natural gas discoveries in recent years, according to W. T. Nightingale, v.p. of Mountain Fuel Supply Company, whose company brought the well in. Well was started in the spring and developed co-operatively by the Mountain Fuel Supply Company and Union Pacific Railroad.

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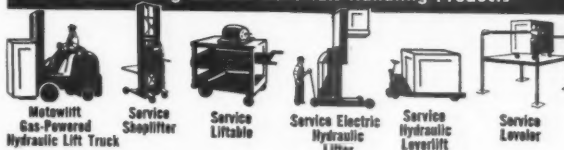
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- Steel Deck Allowing Use Without Skids.
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WESTERN

TRADE WINDS

NEWS ABOUT THOSE WHO DISTRIBUTE AND
SELL INDUSTRIAL EQUIPMENT AND MATERIALS

Kenneth S. Butler has resumed his former position as San Francisco district manager for B. F. McDonald Company, Los Angeles safety equipment manufacturing and distributions, at 1255 Howard Street, San Francisco. Butler returns after three years active Army duty, holding rank of major at time of separation.

Victor Equipment Company has opened a new retail sales store next to the main office and manufacturing plant on Folsom Street, San Francisco. Gas and electric welding apparatus and supplies may be conveniently selected and inspected in the new store. The building provides over 10,000 square feet of additional floor space, making available larger shipping facilities, a modern research and testing laboratory, and large quarters for technical publications and advertising department.

J. Roy Hoffman and Robert H. Heartt have formed a new firm, Hoffman and Heartt, which has taken over the machine tool division of Smith Booth-Usher Company, 2011 Santa Fe Avenue, Los Angeles. Hoffman was formerly vice-president and treasurer of the Smith concern and Heartt was formerly manager of the Machine Tool Division. The new concern will devote its time to machine tools and woodworking.

Marx Hyatt, San Francisco district sales manager of American Lumber and Treating Co., has resumed his duties following 42 months of military service. He is again in charge of the company's office at 604 Mission Street and responsible for sales operations of American Lumber and Treating Company plants at Wauna, Ore., and Weed, Calif.



• Warren Stuart (left) is California repr. for Belden Mfg. Co., Chicago, wire and cable mfrs., while Thomas Hill is N.W. repr. I. F. Schnier Co., hdqtrs. at Seattle.



Robert W. St. Clair has opened the Powdered Metal Products, 1438 North Wilcox Avenue, Los Angeles 28, to facilitate distribution of Keystone Selflube porous bronze bearings and powdered metal machine parts.



• Burt Perry (left) repr. of various Auto-Electric Auto mfrs., has joined industrial division of Kerkling & Co., Burbank, while E. J. Sanders is new Western mgr. of Los Angeles of Thermo-Aire Division, Evans Products Co.

Empire Machinery Co., a partnership consisting of Frank Strauss, Harry King, Kim Smith, Jim Buckley, Frank Vachon, and Bill Hayes, all well known on the West Coast, has opened Los Angeles offices at 2328 Santa Fe Avenue. The company will specialize in machine tools and will have a used machine division.

Ross R. Moore has returned to Los Angeles branch of Electric Storage Battery Co. after four years Naval duty.

Robert R. Pierce of the technical service department of the Pennsylvania Salt Manufacturing Company of Washington has been appointed sales service representative of the Pennsylvania parent company's special chemicals division. He will cover the Washington-Oregon-Idaho-Montana area and headquarters in Tacoma, Wash. George O. Scheidler has been named West Coast divisional manager of the laundry and dry cleaning division of the company.

Jerry Arseneau has been named sales manager, Tacoma Steel & Engineering Co., Tacoma, Wash. He was previously associated with Minneapolis Steel Construction Co. and Seattle Steel Co. Inc.



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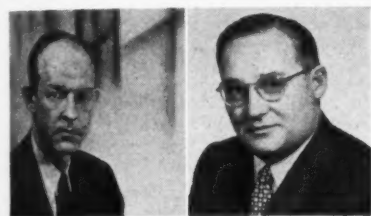
GLENDAL 4, CALIF.

Tide Water Associated Oil Company has opened a Wholesale Sales division in the domestic sales department. E. C. Heinz, former Los Angeles sales manager of the company, will head the department. He will be located in the company's home office in San Francisco. J. M. Shea, Washington district sales manager, will succeed Heinz as sales manager at Los Angeles; J. D. Cardoza, former L. A. assistant sales manager, has been promoted to position of Washington district sales manager, with offices in Seattle, and Mel C. Coleman, asst. mgr. of gasoline sales in San Francisco, is promoted and transferred to post as assistant sales mgr. of the Los Angeles office.

James "Monk" Moscrip, one of the Stanford "Vow Boys," is now northern California sales representative for L. Sonneborn Sons, Inc., manufacturers of building materials. He is back from extended duty with Navy radar specialists.

Machinists' Tool & Supply Co., 3690 Santa Fe Avenue, Los Angeles 11, Calif., has been named distributor in the Southern California area of Carboloy Company, Inc., Detroit. Headquarters office and salesroom will be maintained in Los Angeles. A. C. Johnson is sales manager in charge of the Carboloy operation and Ted Samuels, formerly a Carboloy company direct representative, will act as service specialist.

A. H. Witt, recently resigned as sales manager of Drayer-Hanson, Los Angeles, will engage in business for himself under the firm name of Witt Coils. The concern, located at 767 East Pico Blvd., L.A., will handle a complete line of commercial refrigeration coils and water coolers, selling through jobbers only.



• Milton H. "Mike" Smith (left) has been promoted to super. of fork-type lift truck engineering for Hyster Co., of Portland; and Earl Wiseman to gen. sales mgr. for Protected Steel Products. Wiseman planned ventilation at the open hearth bldg. of Kaiser's Iron and Steel Division here on the Coast.

Harry A. Blackburn has been named refractories engineer for the Pacific Coast by Norton Company, Worcester, Mass., and will have headquarters in Los Angeles. He will service companies doing refractories for metal melting and heat treating for enameling and ceramic uses, as well as industrial filtering and sewage treatment refractories on porous mediums.

R. H. MacGillivray has been appointed regional supervisor of the Pacific Coast area for Westinghouse Electric International Company, headquarters in San Francisco, and will cooperate with Pacific Coast exporters and importers in the promotion of foreign business. He will assist in the detailed handling of all equipment to be negotiated, sold or installed in the Pacific basin.

New faces at Wilson & George Meyer & Company in the San Francisco office, 333 Montgomery Street, are: John Bacon, Lt. Col. in the Army, and Ralph S. Waltz, Lt. in the Navy; in the Los Angeles office, 816 West Fifth Street: Lloyd A. Reeks Jr., Capt. in Air Corps, and George W. Vaughn, Lt. Comdr. in Navy; in the Seattle office, 1020 Fourth Avenue South, John A. Foster, Lt. in Air Corps.

W. S. Wainwright has been appointed district sales manager in San Francisco for the Jones & Laughlin Steel Corp. He has been a salesman in the wire sales department in Pittsburgh.

Pacific Fabricating Company has changed its name to Hammond Manufacturing Corporation. D. C. Hammond continues as president, retaining ownership of all stock. Firm accepts blueprints of products and furnishes quotations for volume production, and facilities include complete plant equipment for fabricating of light and heavy metal units.

Robert B. Davison, who served as a Naval officer during the war, has joined Ellinwood Industries, Los Angeles, as Western Division sales manager of the farm equipment division. Before entering the service he worked at Adel Precision Products, Burbank.

Mel Whitman who has returned to the Food Machinery Corporation and will represent the organization in Washington and British Columbia territory, will have headquarters in Seattle.

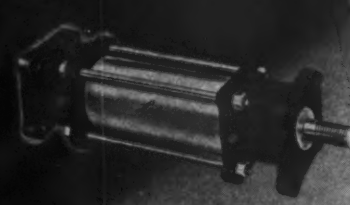
E. S. Banta has resigned as factory repr. for H. H. Robertson Co., San Francisco, to open

his own steel distributing business selling steel buildings, doors, joists, etc.



• New sales engineers are Winfield Wagener (left) for Eitel-McCullough, Inc., San Bruno, mfrs. of radio tubes; and W. S. "Bill" Everett, for Enterprise Engine & Foundry Co., San Francisco. Everett served as lt. comdr. inspecting Naval Material.

Ledeen HEAVY DUTY CYLINDERS



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ENGINEERING PRODUCTS CO.

LEDEEN MANUFACTURING DIVISION
1600 SO. SAN PEDRO ST. • PROSPECT 7044 • LOS ANGELES 15, CALIFORNIA

BULLETIN 453

The old tailor-made to specification way of ordering heavy duty cylinders is now a thing of the past. No more abnormal delays, no more study of diverse models. Here, at last, is a new idea in heavy duty cylinders by Ledeen. You may order right from stock...off the shelf...and get a cylinder to fit your needs and to attach to your machine. It's a money saver, delay eliminator, time saver...and you know exactly what you are getting ahead of time. ★ Bulletin 453 is full of concise and valuable information. Send to Department Q for your copy

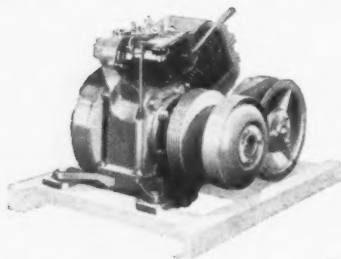
ENGINEERING PRODUCTS CO.

LEDEEN MANUFACTURING DIVISION

1600 SO. SAN PEDRO ST. • PROSPECT 7044 • LOS ANGELES 15, CALIFORNIA

THE SHOWCASE

396



● In this Salsbury Power Package there is available in the low horsepower field a completely automatic driving unit, with drive ratios controlled by driven unit, and clutch engagement controlled by engine speed. Salsbury Motors, Inc., Los Angeles.

397

Vacuum Tube for Heating—A new type 3-150 A Multi-element triode suitable for many applications including industrial heating and television has been developed. Available in high mu or low mu versions it embodies important engineering improvements. Company also makes a transmitting tube of "lighthouse" variety. Data sheets available. Eitel-McCullough, Inc., San Bruno.

398

Correcting Porosity Due to Casting—Available now to industry in the West is the K&W Industrial Seal which has been in use by motor companies in the Middle West and East. The seal is a development of Kerkling and Company for use in foundries where difficulty is encountered with porosity due to casting processes. Compound successfully seals void which would otherwise cause castings to be rejected, with attendant loss of labor overhead from foundry and machine shop. Technical staff maintained by company. Literature available. Industrial Division, Kerkling & Company, Burbank, Calif.

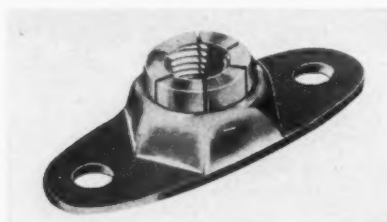
399



● All carbide tooling can be handled in this "Chuck-Matic" machine which specializes in straight, internal or taper boring, form turning or boring, external turning, forming, facing and chamfering. Does heavy duty, high production machining on casting, forging and tubing parts. The National Acme Company, Cleveland 8, Ohio.

400

Anchor Nuts—Lighter in weight and stronger in tension is the claim for The Nutt-Shel Company 2600 series Anchor Nuts. The nut used in combination with the patented retainer is



locked securely in place to form a light, yet sturdy product that retains its usefulness under all conditions of tropical or desert climatic conditions. The Nutt-Shel Co., Los Angeles, Calif.

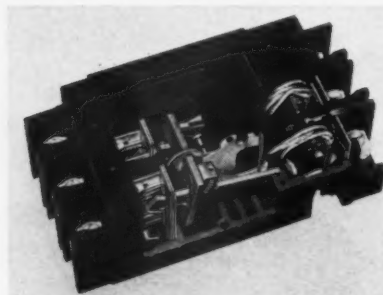
401



● An aluminum foil package for frozen foods perfected by Reynolds Metals Co., is self-sufficient, waterproof, eliminates inner and outer wraps, reduces freezing time 30-50%. Loss of weight and freezer burn reduced to minimum. Adaptable to products needing light-proof, moisture-proof package. Reynolds will run special tests for interested packers in their own plants. Reynolds Metals Co., Louisville, Ky.

402

Ampere Frame Circuit Breaker—The Square D Company, switch and panel division, an-

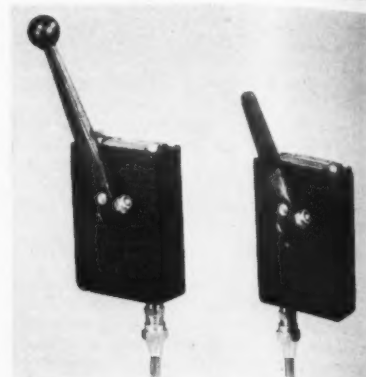


nounces the new ML2 100 ampere frame circuit breaker. Ratings are 15 to 100 amperes—600

volts AC, 50 to 100 amperes 250 volts AC-DC, 2 and 3 pole. Dust resistant. Literature available. Square D Company, Los Angeles, Calif.

403

Hydraulic Remote Control—This miniature hydraulic remote control, smallest of its type and weight yet offered to the industrial market, has been developed by Sperry Products, Inc.



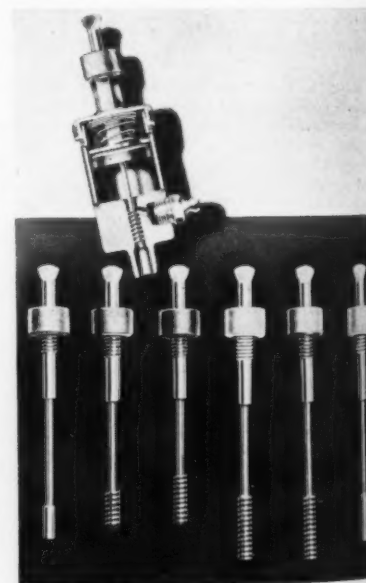
Numerous applications are possible, but those most frequent are throttle, mixture, governor, and all sorts of position indicator controls. The transmitter and receiver, made of bronze, together weigh 3.7 pounds. Either arm will move through an arc of 60 degrees. Complete system is dust-proof and water-proof. Sperry Products, Inc., Hoboken, N. J.

404

Lifting Structural Steel—Beams, girders, channels, etc., can be lifted and nest-stacked in one operation, simply by slipping on the hook, doing away with chain slings and blocking, it is claimed. Called the Diamond Torque Hook, it is a patented device utilizing the torque-action to do its work. Literature available. Elizabeth Iron Works, Elizabeth, N. J.

405

Gun-Fil Lubricators for Industrial Bearings—Manufacturing rights on Gun-Fil Lubricators have been acquired by the Gray Company, Inc., Minneapolis, Minn., manufacturers of lubricat-



ing equipment and production has begun. Designed in four sizes, with lubricant capacities ranging from 1/2 ounce to 8 ounces, pressure filled. Gray Co., Inc., Minneapolis 13, Minn.

YOURS FOR THE ASKING

1957

Having Case Problems?—Descriptive leaflet describing a new "Dry Cyaniding" process which provides a case on low carbon carburizing steel without embrittlement or excessive distortion. Tough core, as well as better and more uniform case, are claimed for method. Case depths up to .025" (of true carbon combined with nitrogen) with a hardness in excess of 60 Rockwell C, readily obtainable. Depth control accurate. Company will treat samples gratis for limited time. *Perfection Tool & Metal Heat Treating Company, Chicago 22, Ill.*

1958

What Can Electronics Do For You?—Westinghouse has the answers in its booklet, "The Business Man's Guide to Electronics." *Electronic Tube Sales Dept., Westinghouse Electric Corp., Bloomfield, N. J.*

1959

Metal Cutters and Fabricators Please Note—Literature available from Houghton describing its cutting fluids which are reinforced to provide needed properties and which can help you in special machining problems in aluminum, magnesium, stainless steel. Leaflets describe company's "Straight Cutting Oils and Bases," "Antiseep Soluble Oils," "MarTemp Oil for Hot-Quenching," and "Liquid Heat 1145 Inhibited Against Decarb." *E. F. Houghton & Co., Philadelphia 33, Pa.*

1960

Need More Floor Space?—Booklet, profusely illustrated, describes how the Greer Multi-Tier Conveyor eliminates space required for storage of goods in process and materials handling, and makes possible conversion from batch methods to continuous processing. Company specializes in confectionery and baking conveyors, makes confectionery and bakery machinery and designs and builds conveyors for other products which can be continuously processed. Applicable where there is any drying or cooling step needed. *J. W. Greer Company, Cambridge 39, Mass.*

1961

For Maintenance Men—Two booklets available describing Prufcoat's protective coatings, waterproof, oilproof, acid proof and alkali proof. Only one material needed for all concrete, structural steel, floors, pipes, tanks and machinery. Price list available. *Prufcoat Laboratories, Inc., New York 17, N. Y.*

1962

Inserted Blade Cutters—Booklet 1045 describes milling cutters of the more commonly required types and sizes. Included are interesting illustrations of special application cutters and cutter sharpening suggestions. *Midwest Tool & Mfg. Co., Detroit 16, Mich.*

1963

Injection Molding—The new HPM Turbojector for the injection molding of mechanical rubber parts is completely described in bulletin No. 4601 just released. Can mold both natural and synthetic rubber. Operating and production features detailed. *Hydraulic Press Mfg. Company, Mount Gilead, Ohio.*

1964

How It's Done—One of the most clever, colorful and readable booklets coming our way, Catalog No. 2041 put out by the National Alloy Steel Co., takes you through its engineering and metallurgical research departments and shows you production experience on the job and the complete modern equipment available. Company makes heat and corrosion resisting castings. *National Alloy Steel, Division of Blaw-Knox Company, Blawnox, Pa.*

1965

Phosphates and Photographic Chemicals—Technical information about the phosphates and photographic chemicals manufactured by A. R. Maas Chemical Company is included in its new catalogue. Handy reference tables are included. *A. R. Maas Chemical Co., South Gate, Calif.*

1966

A Gauge For Plastics Manufacturers—Now you can accurately gauge transparent plastics and glass in curved shapes and inaccessible spots literature about the Aireon optical micrometer reveals. Measures or gives thickness of small flat pieces of Lucite, Plexiglass or plate glass without any trouble. Apparent depth can be measured. Leaflet. *Aireon Manufacturing Corp., Burbank, Calif.*

1967

Crush Forming Grows Up—The new practical way to produce flat form contours on a single easy-to-operate machine is described in literature especially prepared for readers of *Western Industry*. Booklet shows how crush forming has been taken out of the "gadget class" and has gone to work for you as a refined integral part of an entire production process. *The Thompson Grinder Co., Inc., Springfield, Ohio.*

1968

Technical Books—A new catalog of latest books on chemistry, physics, science, technology, medicine, foods, formularies, drugs and cosmetics, engineering, metals, technical dictionaries, building construction, etc., is issued. Catalog gives date of publication of each book as well as price, number of pages, detailed descriptions and full table of contents. *The Chemical Publishing Co., Inc., Brooklyn 2, N. Y.*

1969

Pittchlor—High Test Calcium Hypochlorite—Literature available on Pittchlor, bleach, germicide and disinfectant, for use as a laundry bleach, water sanitation, sewage treatment, food industry, petroleum sweetening, for wool shrink-resistance treatment and public health protection. Form A-700. *Pittsburgh Plate Glass Company, Columbia Chemical Division, Pittsburgh 13, Penna.*

1970

Emergency Pack Type Cutting Outfit—Originally designed and produced for the Navy, literature available now describes the Victor Pack Type Emergency Flame Cutting outfit used during the war, and now available to industry, state highway police, fire departments and rescue squads. Outfit compact and portable. *Victor Equipment Co., San Francisco, Calif.*

1971

Sanitation and Clarification Equipment—A new 44-page book illustrates the complete line of Rex sanitation and liquid clarification equipment. Pictures, drawings, and diagrams are used profusely throughout the book. Illustrated and described are conveyor sludge collectors and Tow-Bro sludge removers, grit collectors and washers, Verti-Flo thickeners, skimmers, Aero-filters, Floctrol, rapid mixers, gravity waste water-oil separators and water screens. Bulletin No. 46-3. *Chain Belt Company, Milwaukee 4, Wis.*

1972

Walton Tap Extractors—Ten tap extractors, designed especially for quick and easy removal of broken pipe-threading taps, are listed in a new descriptive folder covering Walton Tap Extractors. Features of the extractors are included. *The Walton Company, Hartford 3, Conn.*

1973

Machine Tools for Diesels—Special machine tools for diesel engine metal working operations are pictured in a new catalog. Illustrations include various units available, plant facilities, machine tools for crankcase operations, tooling and operations, machine tools for cylinder heads, connecting rods, piston boring, liners and jackets and deep hole drilling, together with pictures of "Diesels on the Job." *W. F. and John Barnes Co., Rockford, Ill.*

1974

Jo Line Torque Tools—A new catalog with suggested torque values is just released by Jo Manufacturing Co. General specifications of the different models are included. Photographs show wrenches in use in the automotive and aircraft fields, power hacksawing, production, service, inspection and maintenance. Tables of suggested torque values of bolts, nuts, studs, and cap screws are included. *Jo Manufacturing Company, South Gate, Calif.*

1975

How to Cut Cast Iron—The title of an illustrated circular which completely covers the "how to" on the cutting of cast iron with the oxy-acetylene flame. Included in Circular N-606, is discussion of proper types of equipment, pre-heating conditions, cutting positions, need of adequate protective clothing, proper oxygen and acetylene pressures, etc. *Technical Service Department, Natl. Cylinder Gas Co., Chicago 6, Ill.*

1976

Surface Pyrometer Applications—A new 12-page Bulletin, No. 194-SA, on portable surface pyrometers for use in plant and laboratory, has been issued by Cambridge Instrument Co. It illustrates and describes the Cambridge Roll Pyrometer for determining temperature of readily accessible rolls or other convex surfaces; extension model for similar surfaces in hard-to-reach locations; mold pyrometer for mold cavities or stationary surfaces of almost any contour; needle model for measuring sub-surface temperature of materials in a plastic or semi-plastic state. Instruments shown in use on wide variety of production operations. *Cambridge Instrument Co., Inc., New York 17, N. Y.*

1977

Industrial Engines—A 12-page catalog featuring its new line of "One-Sixty-One" Series Diesel engines for industrial, automotive, and marine service is ready. Illustrations show 1, 2, 3, 4, 6, and 8-cylinder models, ranging from 15 to 300 horsepower. The heavy-duty six- and eight-cylinder Diesels are available in both standard and supercharged models. Included is a discussion of Buda slow pressure combustion system, engine data table and other descriptive information. *The Buda Company, Harvey, Ill.*

1978

Interested in Plastics?—G. E. has literature now available from its plastics division which describe such different products as a new plastics compound for sealing caps and sleeves, devised for protecting the tubes in condenser systems of refrigerators during the manufacturing process, and the eighteen different patterns of decorative surfacing materials of G. E. Textolite for table and counter tops. Just off the press is the annual "One Plastics Avenue" brochure describing G. E.'s plastics facilities. *News Bureau, Chemical Department, General Electric Co., Pittsfield, Mass.*

1979

Magnetic Chucks and Accessories—An 18-page brochure describing in detail the complete line of Hermeti-Coil Electro-Magnetic Chucks is available. The bulletin carries information on application of magnetic chucking to a wide range of work. Several pages are devoted to illustrations of actual set-ups to aid the production men in visualizing this method of work-holding applied to their own machining problems. Cutaway photos and step-by-step discussion of construc-

tion of waterproof, shockproof, magnetic chucks are included. Also illustrated is the new laminated top plate chuck which increases usable work-holding surface by 22 per cent. *Hanchett Mfg. Co., Big Rapids, Mich.*

1980

Simplified Removal of Tramp Iron—A folder now available describes in detail operation of the "Prater Certified Permanent Magnet" which has been developed for the removal of tramp iron from material. It is adaptable for mounting either on feed tables or spouts at any point in the flow. It is of the two gap type with double Alnico magnets and triple plates mounted in a one-piece bronze frame. Plan views of the magnets are illustrated, together with a discussion and illustration of how the magnet works. *Prater Pulverizer Company, Chicago 50, Ill.*

1981

Glued Loads—A handbook of facts which illustrates and describes step-by-step procedures for palletizing and for unitizing shipments of packaged goods with "Load-lok" Adhesive, which is used to lock together shipping units of corrugated or solid fiber cases, wooden boxes and paper or fabric sacks into palletized or unitized loads. Substantially reduces or totally eliminates losses due to breakage and pilferage. Shippers of fragile materials should be especially interested in book. *National Adhesives, Div. of National Starch Products, Inc., New York 16, N. Y.*

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corrugated roofing
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1982

Case Hardening—Pack Carburizing ovens, liquid case hardening pots and prepared atmosphere (gas) carburizing char-moes are illustrated in a new 4-page bulletin, No. SC-127, just issued by Surface Combustion Corp. How each type of carburizing is applied, together with illustrations of case-hardened steel parts and actual furnace installations, are detailed in the bulletin. A table of pot recommendations, including pot materials, maximum bath temperatures, and type and composition of salt baths is included. *Technical News Bureau, Surface Combustion Corp., Toledo 1, Ohio.*

1983

Plastics—The Story of an Industry—Prepared by the Committee on Plastics Education, the book traces the history and development of plastics from early phenolic experiments begun in 1909, through development of high heat-resistant thermo-plastics such as styrene copolymers in 1944. Wide range of war use is enumerated, and general information about the make up of the industry and just what plastics are is included. Basic methods of forming plastics are illustrated as are the finished products. A technical section lists the principal classes, their characteristics and uses. *Society of the Plastics Industry, New York 17, N.Y.*

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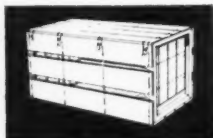
Many hands make light labor, but many handlings make rough going for a container that wasn't quite meant for the job.

For more than 60 years Cabco engineers have had to foresee the wear and tear every Cabco container would meet on its way to market. They build of wood, for its great strength, lightness and economy—and their control extends all the way from standing timber to finished product.

From cherries to camshafts—across a county or around the world—Cabco will do its part to see that your commodity is delivered safely. And *economically*. Your inquiry is invited, and involves no obligation.

CABCO CONTAINERS

Designed to Fit... Engineered to Protect



Over 50,000,000 Barrels:
Tight or slack, barrels or kegs
... Cabco has been making
them for every product from
soap to wine almost since
Western industry began.
This experience is yours
to use.

Boxes Built for the Job:
Cabco engineers have never
stopped pioneering in the
construction of light, com-
pact, wooden containers.
Cabco all-bound crates and
boxes are known around
the world.

Exclusive Sales Agents:

DUFF-MARION & CO.

Distributors of sawn shook and Cabco containers
for shipping all fruits and vegetables

100 Bush Street, San Francisco 4, California
2581 East Eighth Street, Los Angeles 23, California

CALIFORNIA BARREL CO., LTD.

Since 1883

100 Bush Street, San Francisco 4, California

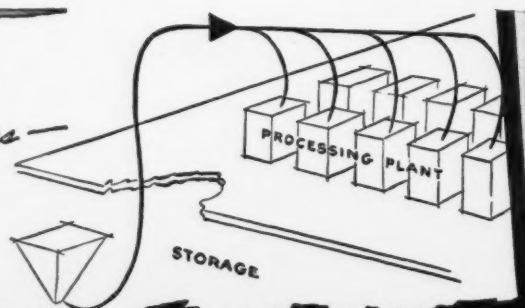
Offices: 2581 East Eighth Street, Los Angeles 23, California

501 Dooley Building, Salt Lake City 1, Utah

Plants: Arcata, San Francisco and Los Angeles, California

*The Problem —
to elevate food ingredients —
distribute to processing machines —
and keep ingredients clean
during handling.*

How S-A Engineers
Stopped DIRT
and
Speeded
HANDLING



Showing loop boots of REDLER Elevators with hoppers which receive material from mixing room for elevation to processing machines on floor above.



Battery of four double-leg REDLER elevators lift food ingredients from mixing rooms to floor above. There four parallel REDLER Closed-Circuit Conveyors distribute materials to long rows of processing machines by means of gates. Materials move in *sealed casings* throughout.

How to keep food ingredients *immaculately clean* while handling them *efficiently*—that's a problem made to order for Stephens-Adamson REDLER Conveyors and Elevators.

For REDLERS move material from intake to discharge points within *sealed, dust-tight casings*, completely protected from exposure to contamination.

But over and above this prime advantage, the REDLERS shown offer numerous others: extreme compactness, which permits handling of large tonnages in small space . . . ability to convey around curves . . . elimination of need for feeders . . . recirculation of materials until drawn off, eliminating danger of overloading.

